Compact Disc Recorder

CDR785/00/01C/17

CDR786/00

Service
Service
Service

Service Manual

COMPACT
disc
DIGITAL AUDIO

COMPACT
disc
DIGITAL AUDIO
Recordable
ReWritable

SERVICING

For servicing CDR785/CDR786, the sets can be divided into two parts:

1. Except for the Power board (Switched Mode Power Supply) and the CD-R/W module the set has to be repaired on component level.
2. The **Power board** and the **CD-R/W module** will be **exchanged completely** in case of a failure. The defective CD-R/W module has to be returned for central repair.

Available circuit descriptions:	*The Basics of Compact Disc Recordable/Rewritable*	4822 725 25242
	3rd generation Compact Disc Recording	3104 125 40100

TABLE OF CONTENTS

chapter
Technical Specification and Measurement setup................1-1, 1-2
Location of printed circuit boards...1-3
Warnings & Safety...2-1
Brief Operating Instructions ....3-1 to 3-15
Dismantling Instructions...4-1 to 4-5
Service hints ....5-1 to 5-3
Service Test Program ....5-4 to 5-6
BLOCK DIAGRAMS ....6-1 to 6-5
WIRING DIAGRAM...6-6

POWER BOARD (for orientation only) ....7-1 to 7-4

FRONT BOARD...7-5 to 7-6

KEY BOARD left...7-7

KEY BOARD right...7-8

chapter
HEADPHONE/MICROPHONE BOARD ....7-9 to 7-10

INTERFACE BOARD..7-11 to 7-13

3CDC MODULE..8-1 to 8-9

EXPLODED VIEWS
  apparatus 10-1
  3CDC module ....8-8 to 8-9

MECHANICAL PARTSLIST see Exploded views
ELECTRICAL PARTSLIST..10-2 ff

**CLASS 1
LASER PRODUCT**

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Published by MS 0012 Service Audio

Subject to modification

GB 3103 785 25030

PHILIPS

TECHNICAL SPECIFICATION

General:

Mains voltage : 220V-230V / 50-60Hz for /00
110V-240V /50-60Hz for /01C
120V / 60Hz for /17
Power consumption : ≤ 18W
≤ 1W in stand by

Input / Output:

Analog in:
input sensitivity : ≤500mV$_{rms}$
max. input voltage : 2,8V$_{rms}$
input impedance : 47kΩ

Analog out:
output level : 2V$_{rms}$±2dB at no load
output impedance : 200Ω

Microphone in:
input sensitivity : ≤1mV$_{rms}$
max. input voltage : 50mV$_{rms}$
input impedance : 2kΩ

Digital in (acc. IEC958):
input level : 0,5V$_{pp}$
input impedance : 75Ω

Digital out (acc. IEC958):
output level : 0,5V$_{pp}$
output impedance : 75Ω

Headphone:
output level : 4,4V$_{pp}$ at no load
output impedance : 120Ω
frequency response: 20 - 20.000 Hz ±3dB
distortion : 0,01% at 1 kHz and -6dB output level at 120Ω
channel difference : ≤ 3dB at 1 kHz
channel crosstalk : -50dB at 1kHz

AUDIO PERFORMANCE

3CDC module: To be measured on ANALOG OUT socket.

frequency response : 20 - 20.000 Hz ±0,6dB
signal/noise ratio : ≥ 115dB (120dB A-weighted)
distortion : -88dB at 1 kHz (-91dB typ.)
channel difference : ≤ 0,5dB at 1 kHz
channel crosstalk : -115dB at 1kHz(-120dB typ.)
de emphasis : 0 or 15/50µs switched automatically by subcode on the disc

laser
output power : 500µW
wave length : 780 ±20nm

CD-RW module: To be measured on ANALOG OUT socket.

frequency response : 20 - 20.000 Hz ±0,3dB (±1dB recording)
signal/noise ratio : ≥ 95dB (98dB A-weighted)
distortion : -86dB at 1 kHz (-83dB recording)
channel difference : ≤ 0,5dB at 1 kHz
channel crosstalk : -86dB at 1kHz (-74dB recording)
de emphasis : 0 or 15/50µs switched automatically by subcode on the disc

laser (laser class 3B)
output power : 1mW max. during reading
20mW max. during writing
wave length : 780 ±20nm

TECHNICAL SPECIFICATION

Remote Control: RC5 commands ***RC283505***

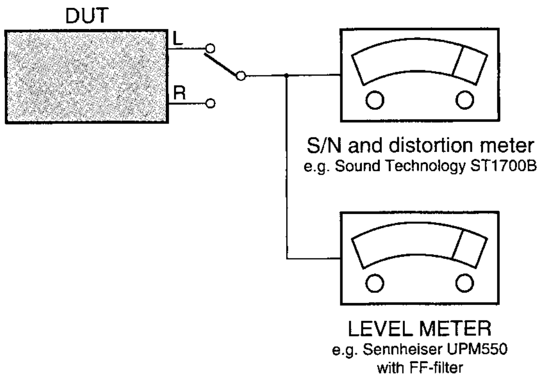
RC KEY	SYSTEM CODE		COMMAND CODE
	CD	CDR	
⏻ Standby	20	26	12
BRIGHTNESS	20	26	71
TRACK INCR.	-	26	114
CD TEXT	20	26	88
1	20	26	01
2	20	26	02
3	20	26	03
4	20	26	04
5	20	26	05
6	20	26	06
7	20	26	07
8	20	26	08
9	20	26	09
TEXT EDIT	20	26	82
0	20	26	00
PROGRAM	20	26	36
NO	20	26	49
YES	20	26	87
▶ PLAY	20	26	53
⏮	20	26	33
⏭	20	26	32
■ STOP	20	26	54
◀◀	20	26	50
▶▶	20	26	52
❚❚ PAUSE	20	26	48
SHUFFLE	20	26	28
REPEAT	20	26	29
CD1	20	20	55
CD2	20	20	56
CD3	20	20	57
CDR	26	26	63

RC5 code RC283505, 130300

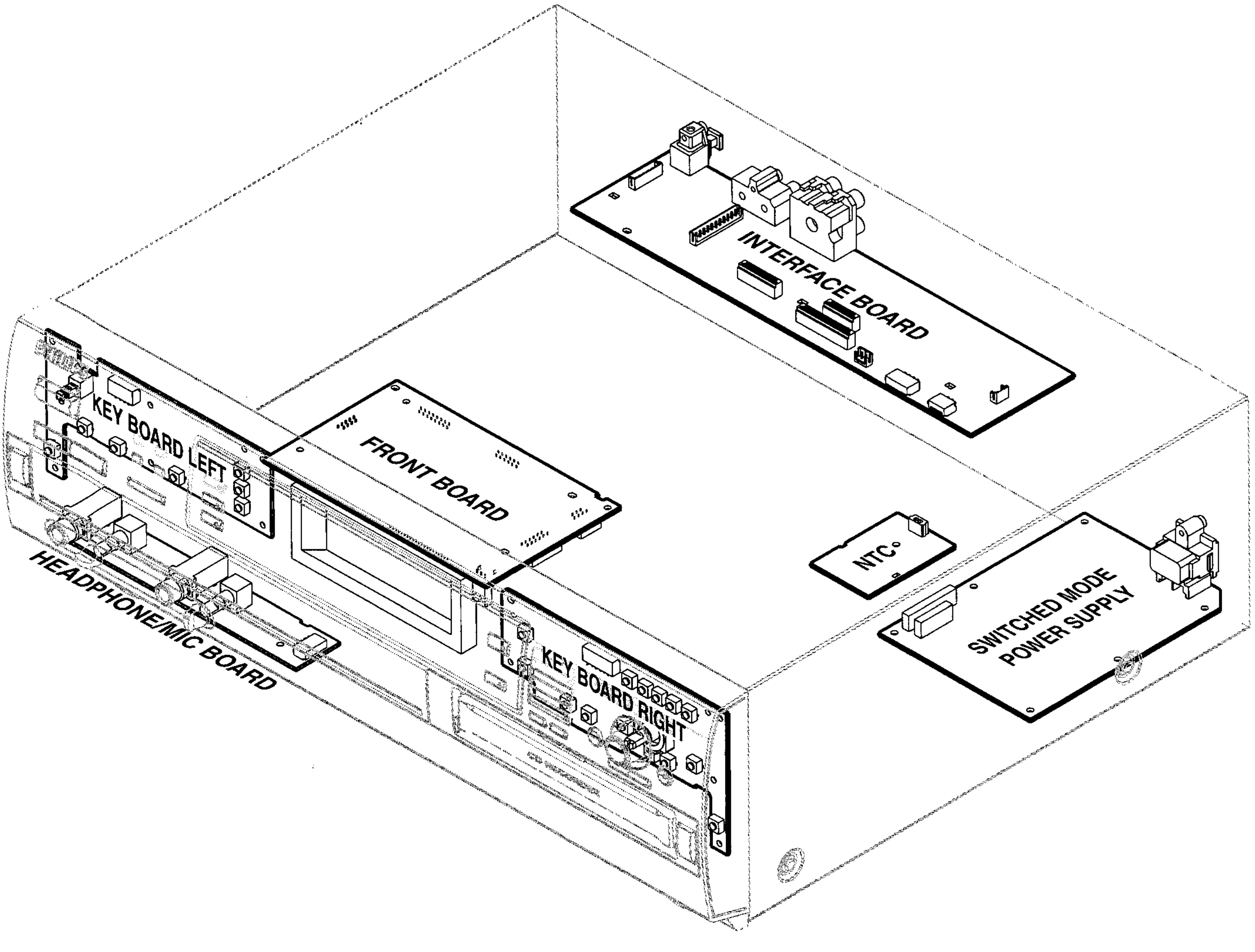
MEASUREMENT SETUP

CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)


DUT
L
R
S/N and distortion meter
e.g. Sound Technology ST1700B
LEVEL METER
e.g. Sennheiser UPM550
with FF-filter

LOCATION OF PRINTED BOARDS

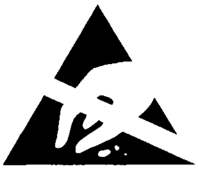

INTERFACE BOARD
KEY BOARD LEFT
FRONT BOARD
NTC
SWITCHED MODE
POWER SUPPLY
HEADPHONE/MIC BOARD
KEY BOARD RIGHT

loccation of pcb´s, 240200

picture 1

WARNINGS & SAFETY

ESD



(GB) WARNING

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wristband with resistance. Keep components and tools at this potential.

(NL) WAARSCHUWING

Alle IC´s en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d´autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévite pourrait être considérablement écourtée par le fait qu´aucune précaution nést prise à leur manipulation.
Lors de réparations, s´assurer de bien être relié au même potentiel que la masse de l´appareil et enfileer le bracelet serti d´une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l´on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, daß Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparationi occorre quindi essere collegato allo stesso potenziale che quello della massa delàpparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB) AVAILABLE ESD PROTECTION EQUIPMENT :

anti-static table mat	large 1200x650x1.25mm	4822 466 10953
	small 600x650x1.25mm	4822 466 10958
anti-static wristband		4822 395 10223
connection box	(3 press stud connections, 1MΩ)	4822 320 11307
extendible cable	(2m, 2MΩ, to connect wristband to connection box)	4822 320 11305
connecting cable	(3m, 2MΩ, to connect table mat to connection box)	4822 320 11306
earth cable	(1MΩ, to connect any product to mat or to connection box)	4822 320 11308
KIT ESD3	(combining all 6 prior products - small table mat)	4822 310 10671
wristband tester		4822 344 13999

SAFETY

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.
Safety components are marked by the symbol ⚠

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkeliijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.
De Veiligheidsonderdelen zijn aangeduid met het symbool ⚠

(F)
Les normes de sécurité exigent que l´appareil soit remis à l´état d´origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.
Les composants de sécurité sont marqués ⚠

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.
Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

(I)
Le norme di sicurezza estigono che l´apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.
Componenty di sicurezza sono marcati con ⚠

(GB) **DANGER**: Invisible laser radiation when open.
AVOID DIRECT EXPOSURE TO BEAM.

CLASS 1
LASER PRODUCT

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(FIN) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen !

(GB)
After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.
The leakage current must not exceed 0.5mA.

(F)
"Pour votre sécurite, ces documents doivent être utilisés par des spécialistes agreés, seuls habilités à réparer votre appareil en panne".

Table of contents

GENERAL INFORMATION

Welcome 5
About this manual 5
Environmental information 5
Supplied accessories 5
Technical data 5
Discs for recording 6
Discs for playback 6
Maintenance 6
CDR(W) handling 6

CONTROLS AND CONNECTIONS

Controls on the front 7
Connections at the back 8

DISPLAY

DISPLAY indications 9
DISPLAY messages 10

INSTALLATION

Connections general 12
Analog connections 12
Digital coaxial connections 13
Digital optical connections 13
Power supply/MAINS 14
Setup recommendations 14
Inserting batteries in the remote control 14

REMOTE CONTROL

Remote control commands 15

LOADING DISCS

CD recorder 15
CD changer 16

PLAYING

Playing 16
CD text 17
Selecting a disc 17
Selecting a track 17
Search 18
Shuffle (random order) play 18
Repeat CDs, track or program 18

PROGRAMMING

Programming track numbers 19
Erasing a track from the program 19
Clearing the program the program 19
Making a program for recording 19

RECORDING GENERAL

Basic information 20
Direct Line Recording (DLR) 20
Auto Level Control (ALC) 20
BALANCE key 20
REC LEVEL key 21
Remarks on recording 21

INTERNAL RECORDING

Recording modes 21
High speed recording and automatic finalizing 22
High speed recording 23
Normal speed recording and listening 23
Microphone recording 24

EXTERNAL RECORDING

Analog or digital recording 25
Recording modes 25
Automatic track increment 25
Recording with automatic synchronized start 26
Manual recording 27

(UN)FINALIZING, ERASING

Finalising CDR & CDRW discs 28
Unfinalising CDRW discs 29
Erasing from a CDRW disc 29

SPECIAL FEATURES

Text Edit (on CD recorder only) 30
Track editing (on CD changer only) 32
TROUBLESHOOTING 33

Welcome !

Thank you for buying this Philips Compact Disc Recorder / CD Changer.

In the eighties Philips invented a new audio system - the CD. The CD (compact disc) revealed to you the new dimensions of digital sounds and added to the pleasures of audio.
Compact disc technology permits a high contrast in loud as well as in quiet passages, with perfect channel separation. Philips has now further developed compact disc technology and the result is the CD recorder.

With your Philips CD Recorder/Changer, you can make your own high-quality audio CDs (subject only to legal restrictions on copying), either by recording at normal or high speed from the Changer to the Recorder, or by recording from an external source. And naturally, you can also play all pre-recorded audio CDs, using one or both decks individually.

About this manual

This manual gives instructions for operating this CD recorder where:
– the figures (1) throughout the text indicate a sequence of actions necessary to perform a certain operation;
– the arrows (➜) indicate the reaction from the recorder;
– the dots (•) indicate remarks, advice or special options within a sequence of actions. The dot-marked instructions are not necessary for the required operation.

All instructions in this manual are based on control via the keys on the set. If there are corresponding keys available on the remote control they can be used as well.

Environmental information

All redundant packing material has been omitted. We have done our utmost to make the packaging easily separable into three mono materials: cardboard (box), polystrene foam (buffer) and polyethylene (bags, protective foam sheet).

Your set consists of materials which can be recycled if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packing materials, exhausted batteries and old equipment.

As an ENERGY STAR® partner,
Philips has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Supplied accessories

– 2 Analog audio cables (with red and white plugs)
– 1 Digital coaxial cable(with black plugs)
– Mains cable
– 2 batteries for the remote control, size AA
– Remote control

Technical data

Subject to modification without notice.

General

Power consumption	16 W
Power consumption in Standby	< 1 W
Operating temperature	5-35° C
Weight	6.0 kg
Dimensions	435 x 360 x 140 mm

Audio

Frequency response	2Hz-22.050 Hz
Playback S/N (A-weighted) CD (CDR)	127 (100) dB
Playback S/N CD (CDR)	121 (98) dB
Playback Dynamic Range CD (CDR)	95 dB (94) dB
Playback Total Harmonic Distortion CD + CDR	- 90 dB/0.003 %
Channel separation CD (CDR)	120 (89) dB
Recording S/N (A-weighted)	96 dB
Recording S/N digital without SRC	equal to source
Recording Dynamic Range	92 dB
RecordingTotal Harmonic Distortion + noise	- 86 dB / 0.005%

This set complies with the radio interference requirements of the European Community.

Discs for recording

For recording, make sure to use special audio discs only. These discs are marked with "Digital Audio" and the logos shown below.

There are two different types of audio discs for the use on this CD recorder:

- **CD-Audio Recordable (CDR) discs**
  These discs can be recorded on once and play in all standard CD players and CD recorders, when they are finalized.
- **CD-Audio ReWritable (CDRW) discs**
  These discs can be recorded on, erased and re-recorded many times and play in CDRW compatible CD players and CD recorders, when they are finalized.
- All Philips CD players and CD recorders with the sticker shown here are CDRW compatible.

To ensure proper working of the set we recommend the use of Philips audio CDR and audio CDRW discs only.

Note: Do not use a computer CDR or CDRW as recording will not work properly!

In certain countries including the UK and certain Commonwealth countries, use of the product (or CD-Recorder) as shown or suggested in this user manual may require the permission of copyright holders.

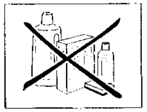
Discs for playback

For playback on this CD changer and CD recorder you can use following audio discs:

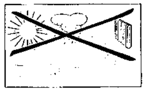
- **All pre-recorded audio CDs**
- **All audio CDR and audio CDRW discs**

Notes:
– Do not try to play a CD-ROM, CD-I or CDV!
– CDR(W) discs, which are recorded on a computer can only be used when they are correctly treated according the audio standard (IEC958: Consumer part). Single session only!

Maintenance



Clean the set with a soft, slightly dampened lint-free cloth. Do not use any cleaning agents as they may have a corrosive effect.

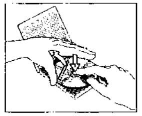


Do not expose the set, batteries or CDs to humidity, rain, sand or excessive heat (caused by heating equipment or direct sunlight).

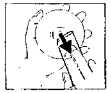
The lenses may cloud over when the set is suddenly moved from cold to warm surroundings. Playing a CD(RW) is not possible then. Leave the set in a warm environment until the moisture evaporates.

CDR(W) handling

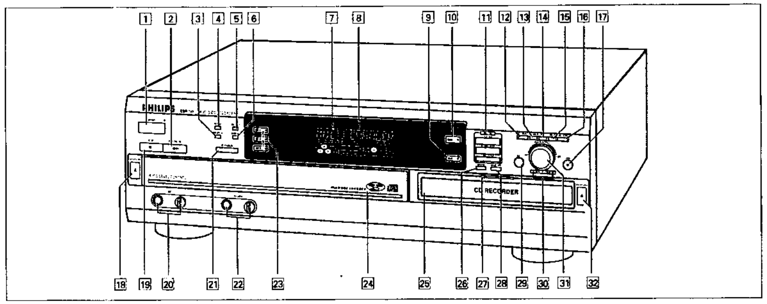
For recording it is very important to use dust and scratch free discs.



To take a CD(RW) out of its box easily, press the centre spindle while lifting the CD(RW). Always pick up a CD(RW) by the edge and put it back after use. Never write on a CD or attach a sticker to it. Write only on the printed side of a CDR or CDRW, and only with a soft felt-tipped pen.



To clean a CD(RW), wipe it in a straight line from the centre toward the edge using a soft, lint-free cloth. A cleaning agent may damage the disc!



Controls on the front

General

1	**ON/OFF**	turns the CD recorder/changer ON and OFF
	ON/OFF indicator	lights up when the set is switched on
2	**PLAY/PAUSE II▶**	starts play/interrupts play
3	**SHUFFLE**	plays discs in changer, program or CD(RW) in recorder in random order
4	**REPEAT**	repeat play (All, program or track)
5	**CD TEXT**	makes CD text scroll over display once
6	**DISPLAY**	selects display information/text
7	**IR sensor**	receives signals from the remote control
8	Display	information screen
9	**AUX**	selects external input
10	**CDR**	selects CDR display/keys
17	**YES**	- selects settings in Text Edit and Track Edit mode
		- stores Text settings
		- plays selected tracks
		- programs track numbers
19	**STOP ■**	stops playback or recording
20	**MIC**(rophone)	microphone socket
	Level	microphone volume control
22	**PHONES**	socket for headphones
	Level	headphones volume control
23	**CD 1, 2, 3**	select CD 1, 2 or 3/CD changer display and keys
29	**NO**	- deletes tracks from a program
		- deletes complete program
		- deletes text in Text Edit mode
30	**◀◀**	- searches backward
		- reviews the tracks in a program
		- controls the cursor in different menus (Text Edit and Track Edit)
	▶▶	- searches forward
		- reviews the tracks in a program
		- controls the cursor in different menus (Text Edit and Track Edit)
31	**I◀ JOG CONTROL ▶I**	- previous/next disc/track (play and program mode)
		- recording level control (recording)
		- balance control (recording)
		- selects settings (menu on)

CD changer

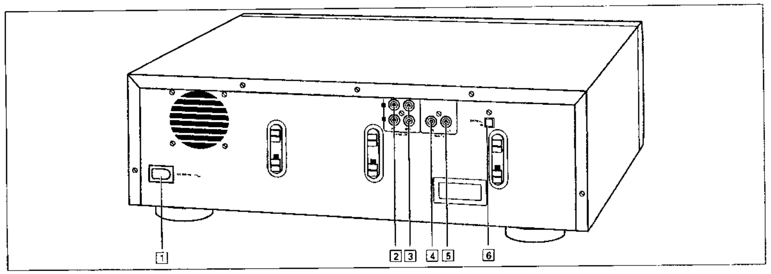
15	**PROG**(ram)	opens/closes program (review) memory
16	**TRACK EDIT**	opens Track Edit mode to create your own 'tracks'
18	**OPEN/CLOSE ▲**	opens/closes disc tray
21	**CD CHANGE**	selects disc in CD changer
24	Disc tray	

CD recorder

11	**Recording keys**	
	CD → CD	selects high speed/auto finalise recording mode
	COMPILE CD	selects high speed recording mode/opens program memory
	REC(ord) **TYPE**	selects other recording modes
12	**REC**(ording) **LEVEL**	enables the EASY JOG key to set the recording level control
13	**BALANCE**	enables the EASY JOG key to set the balance
14	**TEXT**	opens Text Edit mode and and stores entered text
25	Disc tray	
26	**ERASE**	erases recordings
27	**Recording Led**	- Blue in Stop and Play mode
		- Red during recording
		- Red blinking during erasing
28	**FINALIZE**	finalases/unfinalises disc
32	**OPEN/CLOSE ▲**	opens/closes disc tray

Note: Unless stated otherwise, all controls are on the front of the CD recorder/changer. When provided on the remote control, you can also use the corresponding buttons, after selecting the CD recorder or CD Changer by pressing CD-R or CD 1, CD 2,or CD 3.

CONTROLS AND CONNECTIONS



Connections at the back

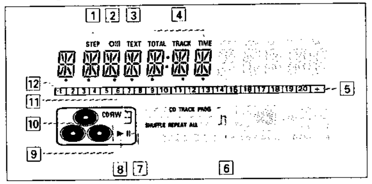
1 Connection to mains

2 **ANALOG IN**	connects to the line output of a tape deck, amplifier or other analogue source
3 **ANALOG OUT CDR & CD**	connects to the line input of an amplifier. (left and right)
4 **DIGITAL IN**	connects to the digital coaxial output of an external CD player
5 **DIGITAL OUT CDR & CD**	connects to the digital coaxial input of e.g. amplifier or recording device
6 **OPTICAL IN**	connects to the digital optical output of an external CD player

DISPLAY

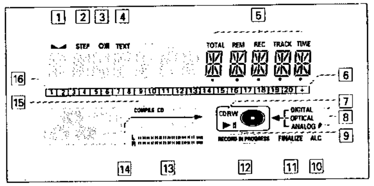
DISPLAY indications

CD changer section



1 **STEP**	indicates the number of tracks in a program
2 O)))	remote control active
3 **TEXT**	CD TEXT active
4 **TRACK TIME**	remaining track time (CDC)
TOTAL TIME	total time (CDC)
TRACK	track number
5 **+**	disc or program contains more than 20 tracks
6 **PROG**	flashes during programming/ lights in program mode
SHUFFLE	plays tracks in random order
REPEAT TRACK	lights up when a track is repeated
ALL	lights up when all tracks on the discs in the changer are repeated/when a program is repeated
CD	lights up when a complete disc in the changer or recorder is repeated
7 **II**	pause function active
8 ▶	lights during play
9 **CD**	CD selected (a pre-recorded CD or finalised CD-R or CD-RW disc)
CD R	unfinalised CD R disc selected
CD RW	unfinalised CD RW disc selected
10	CD changer selected and CD(s) inserted in compartment 1, 2 and/or 3 (a prerecorded CD or finalised CD-R or CD-RW disc)
11 3	disc in play or selected
12 **Track bar**	indicates: - number of tracks on a disc or in a program - number of track in play

CD recorder section



1 ▷ ◁	balance
2 **STEP**	indicates the number of tracks in a program
3 O)))	remote control active
4 **TEXT**	CD TEXT active
5 **TRACK TIME**	remaining track time (CDR)
TOTAL TIME	total time (CDR)
REM REC TIME	remaining recording time
REM TRACK TIME	remaining track time
TRACK	track number
TOTAL REM (TRACK) TIME	total remaining (track) time (in dubbing mode)
6 **+**	disc or program contains more than 20 tracks
7 **CD**	CD inserted (a pre-recorded CD or finalised CD-R or CD-RW disc)
CD R	unfinalised CD R disc inserted
CD RW	unfinalised CD RW disc inserted
9 **DIGITAL**	digital input selected for external recording
OPTICAL	optical input selected for external recording
ANALOG	analog input selected for external recording
🎤	microphone input active
10 **ALC**	Auto Level Control active
11 **FINALIZE**	lights up during finalizing a recording
12 **RECORD IN PROGRESS**	Lights during recording
13 **L/R II II**	indicates the audio signal level
14 ——→	internal recording activated
15 **COMPILE CD**	lights up when Compile CD mode is selected
16 **Track bar**	indicates: - number of tracks on a disc or in a program - number of track in play

DISPLAY messages

Messages, as listed and explained here, may appear on the display for your guidance.

General

PHILIPS CD RECORDER	when set is switched on
READING	reading disc information
OPEN CDC / CDR	during tray opening of changer/recorder
PROGRAM FULL	program full
INSERT DISC	insert disc or insert disc in correct way/when recording is activated while no CD is inserted
WRONG DISC	inserted disc is no audio CD
UNFINALIZED	- lights up when unfinalized CDR(W) disc or wrong disc is inserted in CD changer
	- flashes when CDR disc tray is opened with unfinalised CDR(W) disc inserted
MEMORY _	- lights up when 87 % of memory is used
	- gives the amount of memory used, when tray is opened

Recording

WAIT	when STOP ■ is pressed during recording the first 4 seconds of a track
UPDATE	updating disc contents
DISC-FULL	no more recording possible
AUX DIGITAL ?	digital coaxial input 1 selected
AUX OPTICAL ?	digital optical input selected
AUX ANALOG ?	analog input selected
COPY PROTECT	no digital recording can be made of the external source
NOT FINALIZED	when opening the tray with an unfinalized disc inserted
CD FAST ?	high speed recording of a complete disc from the CD Changer
TRACK FAST ?	high speed recording of a single track from the CD Changer
CD LISTEN ?	normal speed recording of a complete CD from the CD Changer
TRACK LISTEN ?	normal speed synchronized recordingof a single a track
RECORD CD X ?	recording of the entire disc selected
COMPILE CD ?	High Speed recording of compilation (program) selected
AUX CD ?	Synchronised Start of recording of a complete disc from external source
AUX TRACK ?	Synchronised Start of recording of a single track from external source
AUX MANUAL ?	Manual Start of recording from external source selected
AUX MIX MIC ?	Manual Start of mixed recording of *microphone and external source input*
REC TR X ?	select a track for recording
MIC ONLY ?	Manual Start of microphone recording
CLEAR A-B ?	when clearing a passage
A-B FAST ?	highspeed recording of a particular passage
A-B LISTEN ?	normal speed recording of a particular passage
REC LEV - XX DB	record level is being adjusted
NOT FITTING	time left on CDR(W) disc is not enough for proposed recording
ANALOG REC	copy prohibited track found during internal recording. Track will be copied analog (Copy Protection Regulations).
ERASE ?	recorder asks for confirmation when erasing
ERASE X + ?	recorder asks for confirmation when erasing mote than one track
ERASE DISC ?	recorder asks for confirmation when erasing a disc
FINALIZE ?	recorder asks for confirmation when finalising a disc
FINALIZED	when trying to finalise an already finalised disc
FINALIZED CD	when trying to record on an already finalized disc
UNFINAL XX	time countdown during unfinalizing
CHECK INPUT	when RECORD is pressed while no digital source is detected
ERASE XX XX	time countdown when erasing a track or a disc
FINAL XX XX	time countdown when finalising a disc
PROF SOURCE	when a professional source is connected
A - 0:00	when point A of a passage to be repeated is stored

Play

PROGRAM	program mode selected
PLAY PROGRAM	playback of program
CLEAR PROG ?	when clearing a program
CD X ALL	complete CD X selected for programming

Others

AUTO FINAL	when activating/disactivating the auto finalize function
NO AUDIO TR	when the recorder enters a data track during recording
FINALIZE CD	laser power calibration performed 96
	times, please finalize disc
INITIALIZING	during laser power calibration for unfinalized discs
DISC RECOVER	during disc recovering after power failure
OPC ERROR	failure during OPC procedure (OPC = Optimum Power Calibration)
RECORD ERROR	recording error in menu mode
DISC ERROR	when trying to record on or finalize a recovered disc
MEMORY FULL/	when no more text can be stored for a
FINALIZE CD	certain disc. Another disc has to be finalized to obtain memory space
NO TRACKS	when text input is given for an empty disc
TEXT EDIT	when entering Text Edit mode
ALBUM ARTIST	when editing or erasing an artist name
ALBUM TITLE	when editing or erasing a title
TR N ARTIST	when editing or erasing an artist name per track
TR N TITLE	when editing or erasing a title per track
TEXT ERASE	when erasing text
ALL TEXT	when erasing all text selected
ERASE	when confirmation for erasing has to be given with YES key
ERASE ALL	when confirmation for erasing has to be given with YES key
ERASE MEMORY	when waiting for confirmation when erasing a disc
TEXT MEMORY	when selecting text review per unfinalised disc in memory
MEMORY EMPTY	when TEXT MEMORY is selected while no text is in memory
AUTO TRACK	when selecting auto track increment ON or OFF
ALBUM TITLE	will be followed by album title
TRACK TITLE	will be followed by track title
ALBUM ARTIST	will be followed by artist name
TRACK ARTIST	will be followed by track artist name
NO TEXT	no text stored for disc/track

Connections general

For playback on the CD recorder from the CD changer deck the following outputs are present:
- Digital coaxial output (CD & CD-R)
- Analog output (CD & CD-R)

We advise you to connect these to the TAPE or CD-R input on your amplifier.

For external recording the following inputs are present:
- Digital optical input
- Digital coaxial input
- Analog input (stereo)

The connections you make will depend upon the possibilities your audio equipment offers. Please refer to the user manuals for your other audio equipment first.

Digital recordings (optical or coaxial) give the best performance in audio and usability (e.g. auto-track).
(The digital optical connection is less sensitive to external disturbances).
If your equipment does not offer digital connections, the high quality Analog-Digital-Convertor of your set will ensure very good audio performance when recordings are made from the analog input.

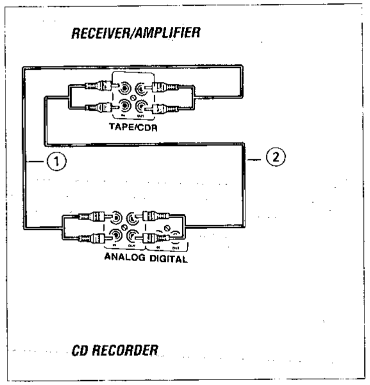
Playback via the digital coaxial output of the CD recorder gives the best audio performance.
If your equipment does not offer digital connections, the high quality Digital-Analog-Convertor of the set ensures a very good sound quality via the analog output.

We advise you to always establish both digital and analog connections. In this way you can always make analog recordings when digital recording is not possible.

We have described the most common ways of connecting the CD recorder. If you still have difficulties with the connections you can always contact the Philips Consumer Service desk in your country.

Analog connections

This connection must be made for playback on the CD recorder deck as well as the CD changer deck (cable ②).
Cable ① is only required if you want to make recordings from an external analog source.



Use the audio cables supplied. Connect the red plugs to the R sockets, and the white plugs to the L sockets.

1 For external recording, connect cable ① between the ANALOG IN-sockets on the set and the CDR LINE- or TAPE OUT-sockets of an amplifier.

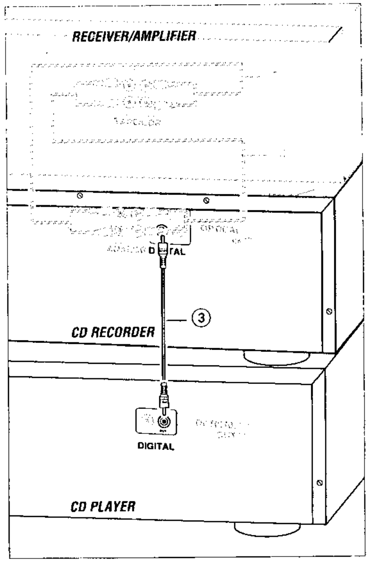
Note: For recording directly from a CD player or tape deck, the analog input of the set should be connected to the analog output of the CD player or tape deck.

2 For playback, connect cable ② between the ANALOG OUT-sockets on the set and the input sockets of an amplifier e.g. TAPE IN, CD-R or AUX.

Note: Never use the PHONO input.

Digital coaxial connections

This connection is required if you want to make recordings from an external CD player with a digital coaxial output.

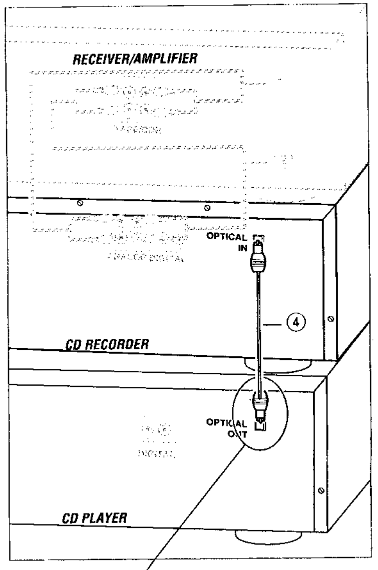


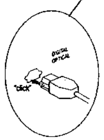
1 For external recording, connect the cable ③ between the DIGITAL IN-socket on the set and the DIGITAL OUT-socket of an external CD player.

Note: Your set is equipped with a digital coaxial output (common output for CD recorder & CD changer deck). This output can be used for digital playback. (e.g. Philips receiver FR960 or FR970.)

Digital optical connections

This connection is required if you want to make recordings from an external CD player with a digital optical output.





When connecting the Digital Optical cable, make sure it is fully inserted until there is a click.

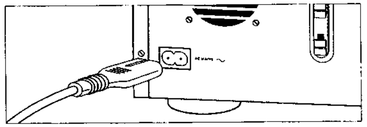
1 Remove the dust caps from the digital optical connection. (We recommend you save the cap.)

2 For external recording, connect a fibre-optic cable ④ between the digital optical input of the set and the digital-optical output of an external CD player.

Note: For playback, the digital coaxial outputs or analog outputs of the CD Changer and CD recorder should be connected to an amplifier.

INSTALLATION

Power supply/Mains



The type plate is located on the rear of the set.

1 Check whether the mains voltage as shown on the type plate corresponds to your local mains voltage. If it does not, consult your dealer or service organisation.

2 Make sure all connections have been made before switching on the mains supply.

3 Connect the mains cable supplied to AC MAINS ~ and to the wall socket. This switches on the mains supply.

4 Press ON/OFF to switch on the set.
→ `PHILIPS CD RECORDER` will be displayed.

- Press ON/OFF again to switch off the set.
- Press ⏻ on the remote control to switch the set to Standby mode.

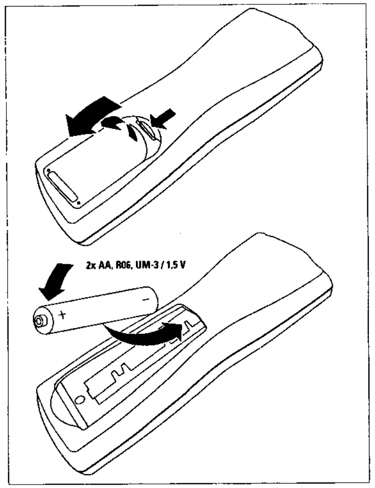
When the set is switched to standby, it is still consuming some power. To disconnect the set from the mains completely, remove the mains plug from the wall socket.

For users in the U.K.: please follow the instructions on page 3.

Setup recommendations

– Place the set on a solid, vibration free surface.
– Make sure there is sufficient space around the set to prevent overheating.
– Do not place the set near a source of heat or in direct sunlight.
– Do not use the set under extremely damp conditions.
– If the set is placed in a cabinet, make sure that a 2.5 cm space remains free on all sides of the CD recorder for proper ventilation.
– Place the set on a solid, vibration free surface.
– Active mobile phones near to the set may cause malfunctions.

Inserting batteries in the remote control



1 Open the battery compartment cover.

2 Insert 2 batteries (AA, R06 or UM-3; as supplied) as shown.

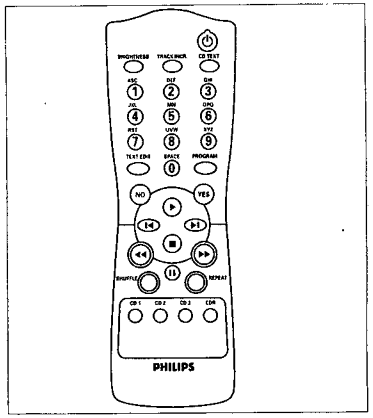
3 Replace the cover.

Note: We recommend you use 2 batteries of the same type and condition.

Batteries contain chemical substances, so they should be disposed of properly.

REMOTE CONTROL

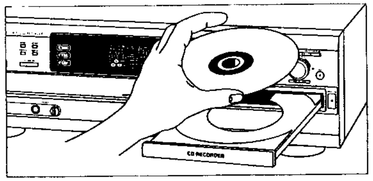
Remote control commands



STANDBY ⏻	switches to Standby
BRIGHTNESS	sets the brightness of the display
TRACK INCR(ement)	selects automatic or manual increase of track numbers during recording
CD TEXT	activates CD text mode
Number/alphabet keys 0 - 9	
	- selects a track by number - selects character for text input
TEXT EDIT	opens Text Edit mode and stores entered text
SPACE	inserts space duting text input
PROGRAM	opens/closes program memory
NO	- deletes tracks from a program
	- deletes complete program
	- deletes text in Text Edit mode
YES	- selects settings in Text Edit and Track Edit mode
	- stores Text settings
	- plays selected tracks
	- programs track numbers
▶	starts CD(RW) play
⏮	previous track (Play and Program mode)
⏭	next track (Play and Program mode)
■	stops CD(RW)
◀◀	- searches backward - cursor control in Prog. review mode
▶▶	- searches forward - cursor control in Prog. review mode
❚❚	interrupts CD(RW) play
SHUFFLE	plays CDs, CD(RW) or program in random order
REPEAT	repeat play
CD 1, 2, 3	selects discs in CD changer
CDR	selects CD recorder

LOADING DISCS

CD recorder

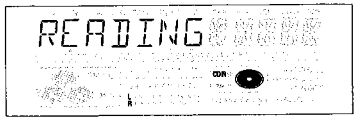


Note:
Only Audio CDs will be accepted in the CD recorder deck If a non-audio disc is inserted, the display shows `WRONG DISC`.

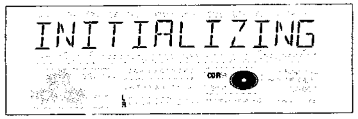
1 Press OPEN/CLOSE to open the disc tray.
→ `OPEN CDR` lights up.

2 Insert a CD, CDR or CDRW in the appropriate recess in the tray, label side up.

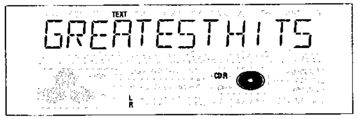
3 Press OPEN/CLOSE to close the tray (see also "Playing").
→ `READING` lights up and the display will show the type of disc inserted.



- If a CDR(W) is finalised it will show **CD** on the display.
- If you insert a blank or partly-recorded CDR or unfinalised CDRW, the CD recorder will calibrate the disc for optimum recording. During this process the display will first show `READING`; `INITIALIZING` and then the number of audio tracks. Calibration can take up to 25 seconds.



- If CD-text is available the TITLE/ARTIST will scroll by.



IMPORTANT !
For recording it is important that the blank disc is completely free from dust particles or scratches (see CD(RW) handling).

CD changer

Note:
Only Audio CDs will be accepted in the CD changer deck If a non-audio disc is inserted, the display shows WRONG DISC.

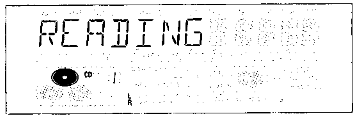
1 Press OPEN/CLOSE to open the disc compartment.
→ OPEN CDC lights up.

2 Insert CDs in the two outer disc trays, label side up.

• Press CD CHANGE.
→ The CD carousel tray will rotate until the inner tray is at the right hand side.

3 Insert a CD in the tray, label side up.

4 Press OPEN/CLOSE to close the compartment (see also Playing a CD).
→ READING lights up and the display will show the type of disc inserted.

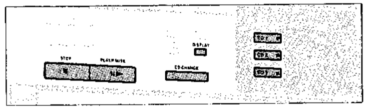


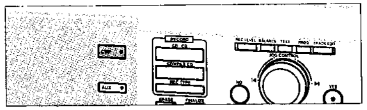
Changing discs during play
1 Press OPEN/CLOSE to open the disc compartment.
→ OPEN CDC lights up.

2 The CDs in the two outer disc trays can be changed while play continues.

IMPORTMANT!
When an unfinalized disc is inserted reading may take up to 1 minute. READING *will then be displayed, followed by* NOT FINALIZED.

Playing



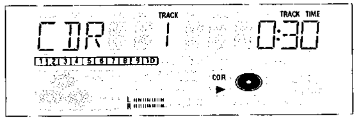


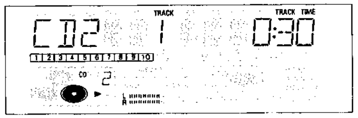
CD recorder
1 Press CDR.
→ The CDR label lights up.

2 Press PLAY/PAUSE ▶ ❚❚ to start play.

CD changer
1 Press CD 1, 2 or 3.

2 Press PLAY/PAUSE ▶ ❚❚ to start play.
→ Play starts with the first track of the disc in the CD recorder or the selected disc in the changer.
→ The track number and track time of the track in play appear on the display.





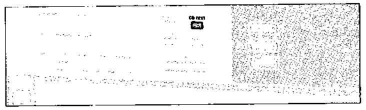
• Press DISPLAY once, twice or three times to see:
→ remaining track time, total remaining time, permanent CD text.

• To interrupt play temporarily, press PLAY/PAUSE ▶ ❚❚ again.
→ ❚❚ lights on the display.

• To continue play, press PLAY/PAUSE ▶ ❚❚ again.

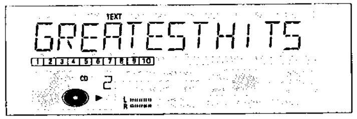
3 To stop play, press STOP ■.
→ The number of tracks and the total playing time appear on the display.
→ After the last track play will stop. If CDC was selected, play will continue with the next disc.

CD text



This feature allows the display of information such as album title or track title contained on a specially encoded CD.

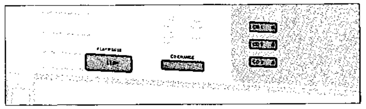
• Make sure to insert a CD with CD text.
→ TEXT is shown and the album title is scrolled once.

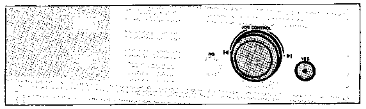


CD text when playback is stopped
• Press CD TEXT to see the following information, which will be scrolled once (if available):
  – **Artist name of album**
  – **Album title**

CD text during playback
• Press CD TEXT to see the following information, which will be scrolled once (if available):
  – **Artist name for track** (on CD recorder only)
  – **Track title**

Selecting a disc





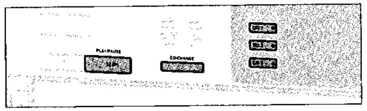
Selecting a disc during play
1 Press CD 1, 2 or 3 or CDR to select a particular disc.
→ Playback is stopped and the new disc is selected.

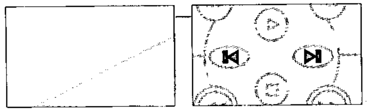
2 Press YES or PLAY/PAUSE ▶ ❚❚ to start play.

Selecting a disc in STOP mode
1 Press CD 1, 2 or 3 or CDR to select the required disc number.

2 Press YES or PLAY/PAUSE ▶ ❚❚ to start play.
→ Play starts with the first track of the selected disc.

Selecting a track





Selecting a track during play
1 Rotate ⏮ JOG CONTROL ⏭ until the required track number appears on the display.
→ Play skips to the beginning of the selected track.

or

Select CDR or CDC (CD 1, 2 or 3) on the remote control and key in the required track number using the numerical keys on the remote control. For 2-digit track numbers, press the keys in rapid succession.
→ Play skips to the beginning of the selected track.

or

Press ⏮ or ⏭ on the remote control one or more times.
→ Play skips to the beginning of the present, previous or subsequent tracks.

Note: For tracks on another disc, first select the required disc by pressing CD 1, CD 2, CD 3 or CDR.

Selecting a track when CD play is stopped
1 Rotate ⏮ JOG CONTROL ⏭ until the required track number appears on the display.

2 Press PLAY/PAUSE ▶ ❚❚ or YES to start playing.

or

1 Select CDR or CDC (CD 1, 2 or 3) on the remote control and key in the required track number using the numerical keys.
For 2-digit track numbers, press the keys in rapid succession.

2 Press PLAY/PAUSE ▶ ❚❚ to start playing.

or

1 Briefly press ⏮ or ⏭ on the remote control one or more times.

2 Start playback by pressing PLAY/PAUSE ▶ ❚❚.

PLAYING

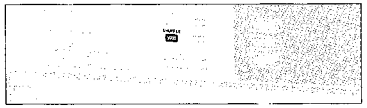
Search

1 Hold down ◀◀ or ▶▶
- ➜ The set first searches backwards or forwards at 10 times normal speed with sound at low volume, then goes to 50 times normal speed with sound muted.

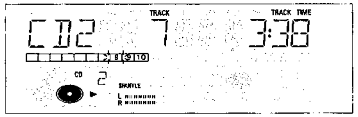
2 Release the button at the desired passage.
- ➜ Play starts at the desired passage.

Note: During Shuffle, Repeat Track or Programmed play, search is restricted to within the track being played at the time.

Shuffle (random order) play



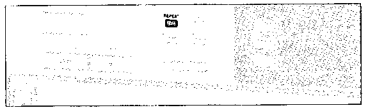
1 Press SHUFFLE before or during CD play to start shuffle play.
- ➜ The tracks on the CD(RW) in the recorder (**SHUFFLE**), the tracks on the CDs in the changer (**SHUFFLE**) or the tracks in the program (**SHUFFLE PROG**) play in random order.



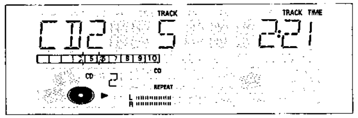
2 Press SHUFFLE again to return to normal CD play.

Note: Shuffle is also cleared if you open the disc tray.

Repeat CD(s), track or program



1 Press REPEAT one or more times during CD play.
- ➜ When **REPEAT TRACK** lights up, the current track plays repeatedly. When **REPEAT ALL** lights up, the discs in the changer or the program play(s) repeatedly.
  When **REPEAT DISC** lights up, the selected disc in the changer or the or the recorder plays repeatedly.

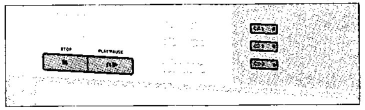


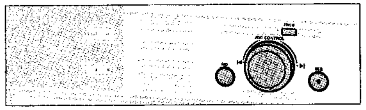
2 To return to normal play, press REPEAT one or more times until:
- ➜ the **REPEAT** label disappears from the display.

Note:
- *You can use shuffle in combination with **REPAT ALL** or programmed play of the CD Changer.*
- ***REPEAT** is also cleared if you open the disc tray.*

PROGRAM

Programming track numbers





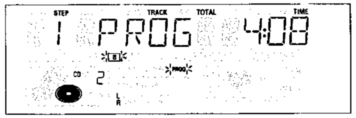
You can select tracks and store them either in the CD changer, or CD recorder memory. If you use the program for playback you can choose one of the two memories, else if you like to specify tracks for recording, use the CD changer memory only! You can store any track more than once.

1 Load the desired disc(s) in the disc tray(s).

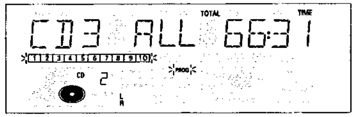
2 Press either CD 1, CD 2, CD 3, or CDR to select the disc.

3 Press PROG(ram).
- ➜ **PROG** starts blinking and PROGRAM is displayed.

4 Rotate ⏮ JOG CONTROL ⏭ (press the numerical keys on the remote control; for 2-digit numbers, press the keys in rapid succession) to select the required track numbers and store each track by pressing YES.
- ➜ The number of programmed tracks (**STEP**), PROG and the total program time are displayed.



CD changer only
- If you wish to program a complete CD from the CD Changer rotate ⏮ JOG CONTROL ⏭ to select CD1 (or 2, 3) ALL and press YES.
  - ➜ All tracks of CD 1 (or 2, 3) will be programmed.



5 Press PROG(ram) to end programming.
- ➜ **PROG** stays shown and the program is currently available.

Note: If the maximum number of programmable tracks is reached, the display shows PROGRAM FULL.

Erasing a track from the program

1 If necessary press STOP ■.

2 Press either CD 1, CD 2, CD 3, or CDR to select the desired memory.

3 Press PROG(ram), followed by ◀◀ or ▶▶ to move through the program steps.
- ➜ The track number at the selected step and the total program time are displayed.

4 Press NO to remove the track from the program.
- ➜ CLEARED is displayed briefly.
- ➜ The next programmed track number will move up to this position and is displayed together with the step number and the remaining total program time.

Clearing the program

1 If necessary press STOP ■.

2 Press NO.
- ➜ CLEAR PROG ? is displayed.

3 Press YES to clear the program.
- ➜ PROG CLEARED will be displayed and **PROG** goes off.

Note: If you open the CD recorder or the CD changer tray the respective program will be cleared.

Making a program for recording

See 'High speed recording and automatic finalizing (optional) of the current program' under chapter 'Internal recording'.

Basic information

We will describe:
- **Digital recording from internal CDC** (fast or normal recording).
- **Recording from external CD player:**
  - Digital
  - Digital (synchronized start with external CD player)
  - Analog
- **Finalizing discs:**
  Finalizing a CDR(W) disc is a simple procedure, necessary to:
  - play a recorded CDR on a standard CD player
  - play a recorded CDRW on a CDRW compatible CD player

- The recording procedure is the same for CDR and CDRW discs. ***Make sure that the CDR(W) is absolutely free of scratches and dust particles.***
- It is advisable to use a CDRW disc for your first try.
- If the disc already contains recordings, the CD recorder will automatically search for the end of the last track, so that recording can start from there.
- For recordings, the minimum track length is 4 seconds. You can record up to a maximum of 99 tracks on a disc. The minimum of recording time left on the disc is 7 seconds. Else, NOT FITTING is displayed and you cannot enter into the record standby mode.
- When you try to record a copy protected material from an external source, COPY PROTECT will be displayed. No further digital recording is possible then.
- The **Serial Copy Management System** (SCMS) only allows digital recording under specific conditions:
  - This means that it is not possible to make a digital copy from a digital copy.
  - Analog recording is always possible !
  - The number of recordings from the original is unlimited.
- Recordings from DAT or DCC players will not always stop automatically.

Important:
If you want to play the recorded CDR disc on any regular CD player, it must first be finalized. See finalising discs.

Finalised CDRW discs play only on CDRW compatible CD players.

For recording from external CD changers do not use AUX MANUAL, ***but*** AUX TRACK ***or*** AUX CD.

Direct Line Recording (DLR)

The CD recorder is equipped with the high-performance Direct Line Recording technique. It ensures a perfect recording of the source material, meaning a true "bit for bit" recording. DLR will always become active, when you make normal recordings in listen mode.

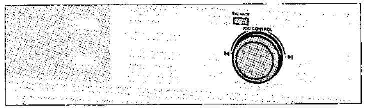
Auto Level Control (ALC)

Auto Level Control ensures that the tracks on the recorded disc have a similar volume level. Always the already recorded tracks of the CDR(W) disc will be taken as reference for the volume level of the following recordings. ALC is active, when ALC is shown.

Auto level control becomes active, when:
- COMPILE CD is being used,
- a disc, a track or a track edit (A-B) is being high speed recorded and the CDR(W) has recordings on it,
- a program from the CD changer is being high speed recorded, or
- CD→CD is being used and the CDR(W) has recordings on it.

Auto level control will not become active, when:
- CD→CD is being used for an empty CDR(W),
- making recordings from an external source, or
- making normal recordings in listen mode.

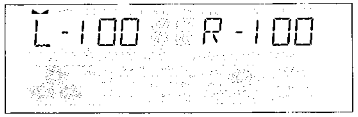
BALANCE key



You can set the reference record balance for both digital and analog recordings.

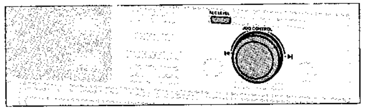
1 Keep BALANCE on the set pressed to enable the ⏮ JOG CONTROL ⏭ to set the BALANCE.

2 Rotate the ⏮ JOG CONTROL ⏭ to set the desired balance.
➜ The set balance will be displayed.



- The balance is reset after the set has been switched to standby.

REC LEVEL key

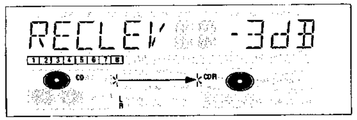


You can adjust the reference record level for both digital and analog recordings. This is also possible when ALC is active. This feature can be used for fading your recordings in or out.

1 Select the required recording mode (see Recording modes).

2 Keep REC LEVEL on the set pressed to enable the ⏮ JOG CONTROL ⏭ to adjust the record level.

3 Rotate the ⏮ JOG CONTROL ⏭ to the left to adjust the desired record level.
➜ The actual record level (in dB) will be displayed.



- The record level is reset after the set has been switched to standby.

Remarks on recording

- During high speed recording, the original recording quality will be maintained.
- When Auto Track is on (default setting), track numbers will automatically be increased during recording.
- If a finalised CDR disc is inserted in the CD recorder and CD→CD is pressed, FINALIZED CD will be displayed. Recording is not possible.
- If a finalised CDRW disc is inserted in the CD recorder and REC TYPE is pressed, UNFINALIZE ? will be displayed. If YES is pressed, the disc will be unfinalised.

Note: If during recording ANALOG REC *appears, the track is copy protected and will be recorded as analog, at normal speed. All other tracks will be copied normally (at double speed).*

Warning: *No more recording possible after finalizing CDR discs!*

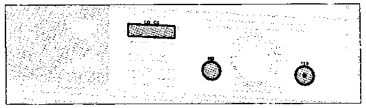
Recording modes

For recording from the internal CD Changer-deck you can choose following recording modes:

- **High speed recording and automatic finalizing:**
  Fast and easy! Record and finalize your CDR(W) in one quick step while the sound is muted. You can record:
  - the current CD *(CD→CD);*
  - a program *(COMPILE CD).*
- **High speed recording** (REC TYPE):
  Record your CDR(W) fast while the sound is muted.
  You can record:
  - an entire CD *(CD FAST);*
  - a track *(TRACK FAST);*
  - a program *(COMPILE CD/ PROG FAST);*
  - a track edit *(AB FAST).*
- **Normal recording and listening** (REC TYPE):
  Listen to the recording while you are making it.
  You can record:
  - an entire CD *(CD LISTEN);*
  - a track *(TRACK LISTEN);*
  - a program *(PROG LISTEN);*
  - a track edit *(AB LISTEN).*
- **Microphone recording:**
  Mix sound from the internal CD Changer with microphone input *(CD MIX MIC).*

High speed recording and automatic finalizing

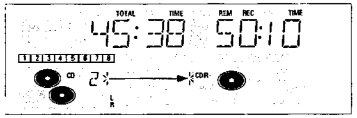
High speed recording and automatic finalizing of the current disc



Notes:
- *During High Speed recording, the Pause function is not operative.*
- *Copy prohibited tracks will be copied analog.* ANALOG REC *is displayed.*
- *During High Speed recording, the sound is not audible.*
- *When the CDR(W) already contains a recording the ALC function will become active.* **ALC** *then lights up on the display.*
- *If required the recording level can be set first, using the REC LEVEL key. See "Rec Level key" under "Recording General".*

1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.

2 Press CD→CD to enter into the record mode.
→ Both decks will be selected in the display, the arrow and the YES key start blinking. The remaining recording time of the CDR(W), the total playing time of the source CD and RECORD CD1 (or 2, 3) ? are displayed.



3 Press YES to start recording and finalizing.
→ The arrow lights, **RECORDING IN PROGRESS** and **FINALIZE** are shown, high speed recording and finalizing start and the actual recording time left starts to count down.

- To check the elapsed recording time, press DISPLAY. This can be done during recording.
- Recording will stop automatically.

4 To stop recording manually, press STOP ■.

- If STOP ■ was pressed within 3 seconds after YES, no recording will take place.

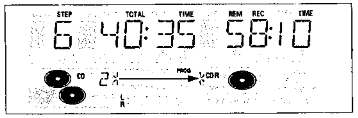
Note: If a program was already available before pressing CD→ CD, this will be ignored. **PROG** *goes off and the current disc will be recorded. After finishing the recording,* **PROG** *is shown and the program is available again.*

High speed recording and automatic finalizing (optional) of the current program

1 *Make sure that the CDR(W) is absolutely free of scratches and* dust particles.

2 *Select and store all desired tracks in the CD changer memory* (see "Programming track numbers").

3 Press COMPILE CD to enter into the record mode.
→ Both decks will be selected in the display, the arrow starts blinking. The remaining recording time of the CDR(W), the total playing time of the program and RECORD PROG ? are displayed.



- If the total time of the program is of bigger size than the remaining recording time of the CDR(W):
→ NOT FITTING ! will be displayed briefly, followed by the remaining recording time and RECORD PROG ?
If you still start recording, only the whole tracks of the program that fit onto the CDR(W) will be recorded.

4 Press either:
NO to change the program.
→ **PROG** starts blinking. Now you can change the program (see "Program") and return to the record mode by pressing COMPILE CD.

or

YES to confirm recording.
→ AUTO FIN ? is displayed.

5 Press either:
YES, if the CDR(W) shall be finalized after recording,

or

NO, if the CDR(W) shall not be finalized after recording.

→ The recording process starts. The arrow lights, **RECORDING IN PROGRESS** is shown, high speed recording and **FINALIZE** (if selected) start and the actual recording time left starts to count down.

- To check the elapsed recording time, press DISPLAY. This can be done during recording.
- Recording will stop automatically.

6 To stop recording manually, press STOP ■.

- If STOP ■ was pressed within 3 seconds after YES, no recording will take place.

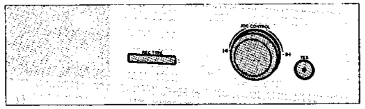
Note: If no program is available and you press COMPILE CD, you enter immediately into the program menu. Start your programming and return to the record mode by pressing PROGRAM or COMPILE CD.

Important:
If you want to play the recorded CDR disc on any regular CD player, it must first be finalised. See 'Finalising discs'.

Finalised CDRW discs play only on CDRW compatible CD players.

High speed recording

High speed recording of an entire disc, a track, a program or a track edit



1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.

2 Press either CD 1, CD 2 or CD 3 to select the disc you wish to record from.

3 Press REC TYPE on the set to enter into the recording menu.

4 Rotate ⏮ JOG CONTROL ⏭ to select one of the following high speed record modes:

If a disc from the CD changer is selected:
→ CD FAST ?: for high speed recording of an entire disc.
  - Continue with step **5**.

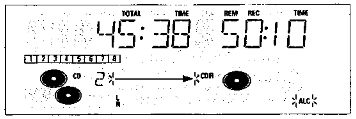
→ TRACK FAST ?: for high speed recording of a track.
  - Press YES to confirm.
  - Rotate ⏮ JOG CONTROL ⏭ to select the track.

→ REC TR ? and the tracknumber are displayed.
  - Continue with step **6**.

If CD changer program mode is available:
→ PROG FAST ?: for high speed recording of the selected disc or of the program.

If CD changer track edit mode is available:
→ A-B FAST ?: for high speed recording of the A–B track.

5 Press YES to confirm your selection.
→ Both decks will be selected in the display, the arrow starts blinking. The remaining recording time of the CDR(W), the total recording time of the CDR(W) and either RECORD CD1 (or 2, 3)?, RECORD PROG ? or RECORD A-B ? is displayed.



6 Press YES to start high speed recording.
→ The arrow lights, **RECORDING IN PROGRESS** is shown, high speed recording starts and the actual recording time left starts to count down.

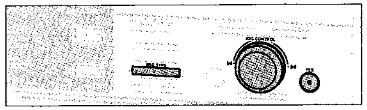
- To check the elapsed recording time, press DISPLAY. This can be done during recording.
- Recording will stop automatically.
- To stop recording manually, press STOP ■.
- If STOP was pressed within 3 seconds after YES, no recording will take place.

Important:
If you want to play the recorded CDR disc on any regular CD player, it must first be finalised. See 'Finalising discs'.

Finalised CDRW discs play only on CDRW compatible CD players.

Normal speed recording and listening

Normal recording and listening of an entire disc, a track, a program or a track edit



1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.

2 Follow step **2** and **3** of "High speed recording".

3 Rotate ⏮ JOG CONTROL ⏭ to select one of the following normal record options:

If CD changer is selected:
→ CD LISTEN ?: for listening to the entire disc during normal recording
  - Follow step **5** and **6** of "High speed recording"

→ TRACK LISTEN ?: for listening to the track during normal recording
  - Press YES to confirm.
  - Rotate ⏮ JOG CONTROL ⏭ to select the desired track.

→ REC TR ? and the tracknumber is displayed.
  - Continue with step **6** of "High speed recording"

If CD changer program mode is available:
→ PROG LISTEN ?: for listening to the program during normal recording

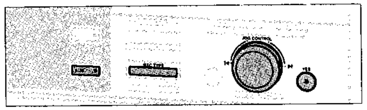
If CD changer track edit mode is available:
→ A-B LISTEN ?: for listening to the A–B track during normal recording

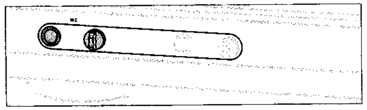
4 Follow step **5** and **6** of "High speed recording".

Note: If required the recording level can be set first, using the REC LEVEL key. See "Rec Level key" under "Recording General"

INTERNAL RECORDING

Microphone recording





1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.

2 Set MIC LEVEL to the minimum level to prevent acoustic feedback (e.g. a loud howling sound) before you connect the microphone.

3 Connect a microphone to MIC.

4 Press CD 1, CD 2 or CD 3 to select the disc you wish to mix the microphone with.

5 Press REC TYPE on the set to enter into the recording menu.

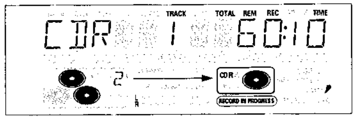
6 Rotate ◀◀ JOG CONTROL ▶▶ to select the manual record mode for the microphone:
➜ `CD MIX MIC` is displayed.

7 Press YES to confirm.
➜ `WAIT` is displayed.
➜ `RECORD ?` is displayed.

8 Press YES to start recording.

9 Rotate ◀◀ JOG CONTROL ▶▶ to select the desired track.
➜ The disc tray number, the current track number and playing time of the track are displayed.

10 Press PLAY/PAUSE ❚❚ ▶ to start playback.
➜ The selected source is mixed to the microphone.

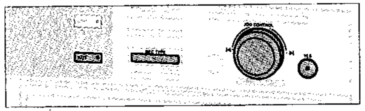


11 Press STOP ■ to stop recording.

- To perform microphone recording only see "Manual recording" of the chapter "External recording"

EXTERNAL RECORDING

Analog or digital recording

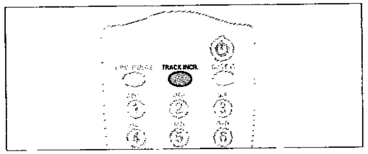


When making recordings from an external source, we recommend to do analog recording only if digital recording is not possible. Digital recording will usually result in better sound quality.

Recording modes

For external recording you can choose following recording modes:
- *AUX CD* - to make an automatic recording of an external source simply by starting the source.
- *AUX TRACK* - to make an automatic recording of a single track from an external source simply by starting the source.
- *AUX MANUAL* - to start a manual recording from an external source.
- *AUX MIX MIC* - to start a mixed recording of microphone and external source input.
- *MIC ONLY* - manual start of microphone recording.

Automatic track increment



In recording mode tracks will be incremented automatically such that the track numbers are positioned on the same position as the original.

- Press as often as necessary TRACK INCREMENT on the remote control during stop when CDR is selected to switch the automatic track increment function on.
  ➜ `AUTO TR ON` is displayed and the function is switched on. Track increments are now automatically detected from digital source material. In analog source material a silence of 2.7 seconds or more is detected as a track increment.
- Press as often as necessary TRACK INCREMENT on the remote control during stop when CDR is selected to switch the automatic track increment function off.
  ➜ `AUTO TR OFF` is displayed and the function is switched off. Track numbers can now be incremented manually by pressing TRACK INCREMENT on the remote control during recording. The minimum track length is 4 seconds.

Notes:
– Track numbers cannot be changed after recording.
– The automatic track increment only works with consumer sources with a digital output signal according to the IEC 958 (consumer part) audio standard. DAT, DVD and DCC do not deliver this signal.

Recording with automatic synchronized start

Recording of an entire disc or a track with automatic start

Important:
- *Recording from CD-changers should always be started in the Auto-Start mode.*
- *For recording from external CD changers do not use* AUX MANUAL, *but* AUX TRACK *or* AUX CD.

1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.

2 Press repeatedly AUX to select the input for the external source you want to record from.
  ➜ AUX DIGITAL is displayed if the digital coaxial input is selected.
  ➜ AUX OPTICAL is displayed if the digital optical input is selected.
  ➜ AUX ANALOG is displayed if the analogue input is selected.

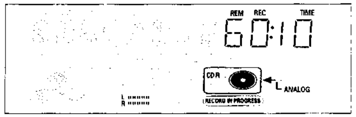
3 Press REC TYPE on the set to enter into the recording menu.

4 Rotate ⏮ JOG CONTROL ⏭ to select either:
  ➜ AUX CD ?: for recording with synchronised start of an entire disc
  ➜ AUX TRACK ?: for recording with synchronised start of a track

5 Press YES to confirm your selection.
  ➜ START SOURCE, AUX and the remaining recording time of the CDR(W) are displayed.

Notes: If required the recording level can be set first, using the REC LEVEL key. See "Rec Level key" under "Recording General"

6 Start playback on the selected source.
  ➜ The CD recorder starts to record simultaneously and recording in progress is shown. The remaining recording time left of the CDR(W) is displayed.



Note: If you start playback on the selected source within a track, recording starts at the beginning of the next track or after 2.7 seconds of silence in analogue recordings.

7 If a digital source is selected:
After the recording process, the CD recorder stops automatically.

Note: Recordings from DAT or DCC will automatically stop after 20 seconds silence.

If an analogue source is selected:
After the recording process, the CD recorder stops after a silence of 20 seconds on the source material.

- To stop recording manually, press STOP ■ on the set.
  ➜ **RECORDING IN PROGRESS** goes off.

Important:
If you want to play the recorded CDR disc on any regular CD player, it must first be finalised. See finalising discs.

Finalised CDRW discs play only on CDRW compatible CD players.

Manual recording

Manual recording from an external source

1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.

2 Press repeatedly AUX to select the input for the external source you want to record from.
  ➜ AUX DIGITAL is displayed if the digital coaxial input is selected.
  ➜ AUX OPTICAL is displayed if the digital optical input is selected.
  ➜ AUX ANALOG is displayed if the analogue input is selected.

3 Press REC TYPE on the set to enter into the recording menu.

4 Rotate ⏮ JOG CONTROL ⏭ to select the record type.
  ➜ AUX MANUAL ?: for manual start of recording

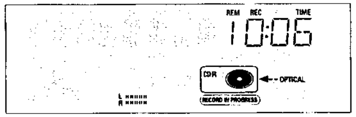
5 Press YES to confirm your selection.
  ➜ WAIT is displayed.
  ➜ RECORD ? , AUX and the remaining recording time of the CDR(W) are displayed.

6 Start playback on the external source in order to set the optimal recording level on the CD recorder (see "REC LEVEL key").

7 Stop playback on the external source.

8 Go to the beginning of the desired track.

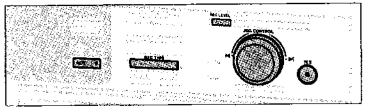
9 Press YES and simultaneously start playback on the external source.
  ➜ The CD recorder starts to record and recording in progress is shown. The remaining recording time left of the CDR(W) is displayed.



Note: If CHECK INPUT *is flashing, check the digital connection.*

10 Press STOP ■ on the set to stop recording.
  ➜ UPDATE is displayed and **RECORDING IN PROGRESS** goes off.

Manual microphone recording



1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.

2 Set MIC LEVEL to the minimum level to prevent acoustic feedback (e.g. a loud howling sound) before you connect the microphone.

3 Connect a microphone to MIC.

4 Press repeatedly AUX to select the input for the external source you wish to mix the microphone with.
  ➜ AUX DIGITAL is displayed if the digital coaxial input is selected.
  ➜ AUX OPTICAL is displayed if the digital optical input is selected.
  ➜ AUX ANALOG is displayed if the analogue input is selected.

5 Press REC TYPE on the set to enter into the recording menu.

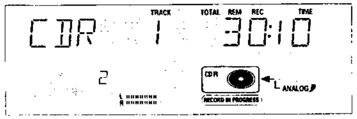
6 Rotate ⏮ JOG CONTROL ⏭ to select the record type:
  ➜ AUX MIX MIC: the microphone is mixed to the external source.
  ➜ MIC ONLY: only the microphone is recorded.

7 Press YES to confirm your selection.
  ➜ WAIT is displayed.
  ➜ RECORD ?, AUX and the remaining recording time of the CDR(W) are displayed.

8 Set the optimal recording level on the CD recorder (see "REC LEVEL key").

- In addition you can also set the optimal recording level of the microphone by turning MIC LEVEL.

9 ***If*** AUX MIX MIC ***is selected:***
Press YES and simultaneously start playback on the external source.
  ➜ The CD recorder starts to record and recording in progress is shown. The remaining recording time left of the CDR(W) is displayed.



EXTERNAL RECORDING

If MIC ONLY ***is selected:***
Press YES on the set to start recording.
➜ The CD recorder starts to record and **RECORDING IN PROGRESS** is shown. The remaining recording time left of the CDR(W) is displayed.

10 Press STOP ■ on the set to stop recording.
➜ UPDATE is displayed and **RECORDING IN PROGRESS** goes off.

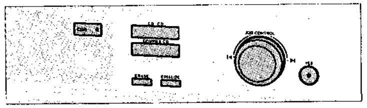
Important:

If you want to play the recorded CDR disc on any regular CD player, it must first be finalised. See finalising discs.

Finalised CDRW discs play only on CDRW compatible CD players.

(UN)FINALIZING, ERASING

Finalising CDR & CDRW discs



Finalizing a CDR(W) disc is a simple procedure, necessary to:
- play a recorded CDR on a standard CD player
- play a recorded CDRW on a CDRW compatible CD player and CD recorder
- avoid further unwanted recordings on a disc
- avoid erasure of tracks on a CDRW

Notes:
- *Finalizing will take about 2-4 minutes.*
- *After finalization of the CDR(W),* **CDR(W)** *changes to* **CD** *on the display.*
- *During finalization no other operating commands can be executed.*

Auto finalizing
When you use either CD→CD or COMPILE CD, your recordings will be finalized automatically (see."High speed recording and automatic finalizing").

Manual finalizing when recording is in progress

1 Press FINALIZE on the set during recording.
➜ AUTO FINAL ? is displayed.

2 Press YES to confirm.
➜ **FINALIZE** is shown. The finalization will start after recording and the actual finalizing time left will start to count down.

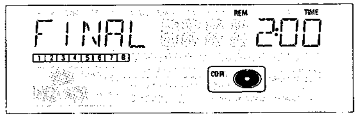
Manual finalizing when recording is stopped

1 Insert the CDR(W) you want to finalize in the CD recorder tray.

2 Press CDR to select the CD recorder.

3 Press FINALIZE on the set.
➜ FINALIZE ? is displayed.

4 Press YES to start finalizing.
➜ **FINALIZE** is shown, FINAL is displayed and the actual finalizing time left starts to count down.



(UN)FINALIZING, ERASING

Unfinalising CDRW discs

If you want to record (or erase) on (from) an finalized CDRW, you have to unfinalize it first.

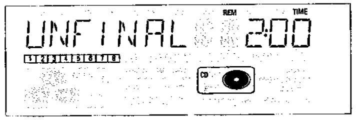
Notes:
- *Unfinalizing will take approximately 2 minutes.*
- *After unfinalizing of the CDRW,* **CD** *changes to* **CDRW** *on the display.*
- *When unfinalizing a CDRW with CD text on it available, this text will be transferred to the CD recorder memory. In case the memory is full, you have to erase text (see "Erasing text") or to finalize another disc first in order to obtain memory space.*

1 Insert the CDRW you want to unfinalize in the CD recorder tray.

2 Press CDR to select the CD recorder.

3 Press FINALIZE on the set.
➜ UNFINALIZE ? is displayed.

4 Press YES to start unfinalizing.
➜ UNFINAL is displayed and the operation time left starts to count down.



Erasing from a CDRW disc

It is possible to erase one or more tracks (starting from the end of the last track) or the entire CDRW.

Erasing an entire CDRW

1 Insert the CDRW you want to erase in the CD recorder tray.

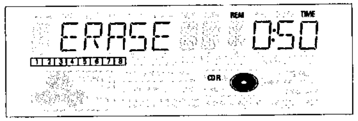
2 Press CDR to select the CD recorder.

3 Press ERASE to enter into the erasing menu.

4 Rotate ⏮ JOG CONTROL ⏭ to select:
➜ ERASE DISC ?: for erasing the entire disc.

5 Press YES to confirm your selection.
➜ ERASE ? and the total number of tracks to be erased are displayed. All track numbers are blinking in the music calendar.

6 Press YES to start erasing.
➜ ERASE is displayed and the operation time left starts to count down. The track number of the actual erased track will go off in the music calendar.



Erasing one or more tracks

1 Insert the CDRW you want to erase from in the CD recorder tray.

2 Press CDR to select the CD recorder.

3 Press ERASE to enter into the erasing menu.

4 Rotate ⏮ JOG CONTROL ⏭ to select the track number(s) you wish to erase:
➜ ERASE and the track number (e.g. 10 +) are displayed.

- To select more tracks to be erased repeat step **4**.

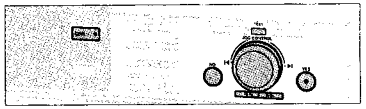
Note: When erasing more tracks, the tracks to be erased must be selected in sequence, starting from the last recorded track. Example: The CDRW has 5 tracks recorded on it. Now, you can erase track 5 and 4. You can also erase track 5, 4 and 3, however you cannot erase track 5 and 3!

➜ All track numbers selected for erasing are blinking in the music calendar. The remaining track numbers light up.

5 Press YES to confirm your selection.
➜ ERASE ? is displayed.

6 Press YES to start erasing.
➜ ERASE is displayed and the operation time left starts to count down. The track number of the currently erased track will go off in the music calendar.

Text edit (on CD recorder only)



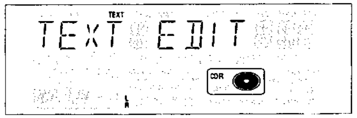
After you have recorded your CDR(W), the TEXT EDIT feature allows you to give names to to discs and tracks. Disc and track names will be displayed during playback. All names will be stored in the memory and can be called up and changed at any time.
A maximum of 60 characters per item can be stored.
The following items can be selected:
ALBUM ARTIST: for editing the CD artist.
ALBUM TITLE: for editing the CD title.
ARTIST TR(ack): for editing the artist of track 1, 2, 3, etc.
TITLE TR(ack): for editing the title of track 1, 2, 3, etc.

Storing text during STOP mode

1 If necessary press STOP ■.

2 Press CDR to select the CD recorder.

3 Press TEXT to enter into the text edit menu.
➜ TEXT lights up and TEXT EDIT is displayed.



4 Press YES to confirm.

5 Rotate ⏮ JOG CONTROL ⏭ to select either:
➜ ALBUM ARTIST.
➜ ALBUM TITLE.
➜ ARTIST TR 1 or (2, 3,...): for editing the artist of track 1 or (2, 3,...).
➜ TITLE TR 1 or (2, 3,...): for editing the title of track 1 or (2, 3,...).

6 Press YES to confirm the selection.

7 Rotate ⏮ JOG CONTROL ⏭ (press the alphabet keys on the remote control) to select a character.

8 Press YES to confirm the selection.
➜ The cursor moves to the next character space.

9 Repeat steps **7** and **8** for adding further characters.

10 Press TEXT to save the characters that have been selected and to exit to the last position in the text editing menu.
➜ UPDATE is displayed.

Storing text during recording

You can store and edit text even while recording a single track or single CD, or when recording from an external source or tuner. Editing text during finalizing is not possible. Make sure, when using high speed recording and automatic finalizing, to enter the text before finalizing starts, otherwise automatic finalizing will be cancelled.

- Follow steps **3–10** of "Storing text during stop mode"

Note: *Editing text is not possible when a copy protected track is analogue recorded. Editing is stopped, "*CD TEXT SAVED*" is displayed and your text is saved for later editing."*

Auto copied text

When an artists name has been stored for a track, it will be copied automatically into the next track.

- Press either:
  TEXT to confirm the copied text.

or
NO to delete the copied text and to enter a new one.

Inserting a space

1 Press ◀◀ or ▶▶ to move to the position where the space is to be inserted.
➜ The position starts blinking.

2 Press YES to confirm the position of the insert character.
➜ A space will be inserted, text will move to the right.

- You can also use the SPACE button on the remote control to insert a space.

Deleting and substituting a character

1 Press ◀◀ or ▶▶ to move to the characters position to be deleted or substituted.
➜ The character starts blinking.

If you want to delete the character:

2 Press NO.
➜ The character is deleted and the text is shifted one position to the left.

If you want to substitute the character:

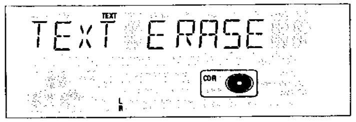
2 Rotate ⏮ JOG CONTROL ⏭ (press the alphabet keys on the remote control) to select a new character.
Press YES to confirm the selection.

- To change another character press ◀◀ or ▶▶

Erasing text

1 Press TEXT to enter into the text edit menu.
➜ TEXT lights up and TEXT EDIT is displayed.

2 Rotate ⏮ JOG CONTROL ⏭ to select the text erase menu.
➜ TEXT ERASE is displayed.



3 Press YES to confirm.

4 Rotate ⏮ JOG CONTROL ⏭ to select either:
➜ ALL TEXT: All text of the selected disc is chosen to be erased in one step.
➜ ALBUM ARTIST: CD artists name is chosen to be erased.
➜ ALBUM TITLE: CD title is chosen to be erased.
➜ ARTIST TR 1 or (2, 3,...): artists name of track 1 or (2, 3,...) is chosen to be erased.
➜ TITLE TR 1 or (2, 3,...): title of track 1 or (2, 3,...) is chosen to be erased.

5 Press YES to confirm your selection.
➜ ERASE ? or ERASE ALL ? is displayed.

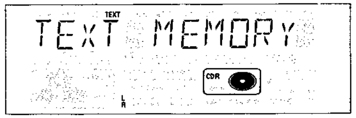
6 Press YES to start erasing.
➜ UPDATE is displayed and the chosen text is erased.

Erasing from the memory

When the text memory of your CD recorder is full, the messages MEMORY FULL and FINALIZE DISC will be displayed. If you still want to add a new disc to the text memory, you have either to erase another disc from the memory or you have to finalize another disc.

1 Press TEXT to enter into the text edit menu.
➜ TEXT lights up and TEXT EDIT is displayed.

2 Rotate ⏮ JOG CONTROL ⏭ to select the memory view menu.
➜ TEXT MEMORY is displayed.



3 Press YES to confirm.

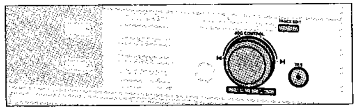
4 Rotate ⏮ JOG CONTROL ⏭ to select the disc you wish to erase from the text memory.

5 Press YES to confirm.
➜ ERASE MEMORY is displayed.

6 Press YES to confirm the text erasure of that particular disc.

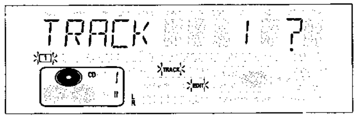
Note: *If there are no discs in the text memory stored* MEMORY EMPTY *will be displayed.*

Track editing (on CD changer only)



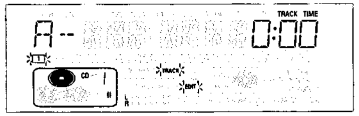
You can create a "track" by marking a passage of music within one track on the current disc. This new "track" can be used for recording or playing. The minimum track length is 4 seconds.

1 Press TRACK EDIT on the set.
→ TRACK EDIT starts blinking, TRACK and the current track number ? are displayed. The current track number is also blinking in the track bar.



2 Rotate ⏮ JOG CONTROL ⏭ until the desired track number is displayed.

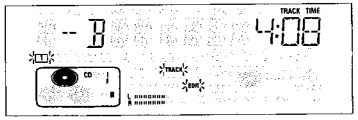
3 Press YES to confirm the selected track.
→ The marker position A and the track time will be displayed. The first 4 seconds of the track will be played continously.



4 Press PLAY/PAUSE ▶ ⏸ on the set to play to the desired start position of your new "track" (the initial position of marker A is always the start of the chosen track).

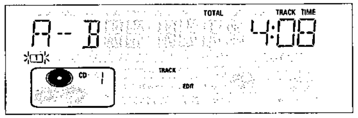
- To fast forward to the desired start position press ◀◀ or ▶▶ on the set.
- To fine tune the position press first PLAY/PAUSE ▶ ⏸ on the set, then rotate ⏮ JOG CONTROL ⏭.

5 Press YES to confirm the position of marker A.
→ The marker position B and the new "track" time will be displayed. The first 4 seconds before marker position B until marker position B will be played continously.



6 Press PLAY/PAUSE ▶ ⏸ on the set to play to the stop position of your new "track" (The initial position of marker B is always the position of marker A plus 4 seconds).

7 Press YES to confirm the marked passage.
→ TRACK EDIT is shown, A-B and the track edit time are displayed.



- Press TRACK EDIT again to leave Track Edit mode.
→ The new "track" will be stored.

Note: If you open the CD changer tray the edit is deleted.

Clearing the track edit

1 Press NO during stop.
→ CLEAR A-B ? is displayed.

2 Press YES to clear the markers.
→ The markers A-B are cleared.

WARNING
Under no circumstances should you try to repair the set yourself as this will invalidate the guarantee. Do not open the set as there is a risk of electric shock.
If a fault occurs, first check the points listed, before taking the set for repair.
If you are unable to solve a problem by following these hints, consult your dealer or service centre.

LASER SAFETY
This unit employs a laser. Only a qualified service person should remove the cover or attempt to service this device, due to possible eye injury.

SYMPTOM
- possible solution:

No power
- ensure that the ON/OFF button is on: the set is in standby mode, press any key to activate it
- ensure that the mains cable is plugged in correctly
- switch the set OFF and then immediately back ON

Auto track does not work
- check if auto track is selected
- check if there are 2.7 seconds silence in between the tracks (analog recording only)
- check if the source is a consumer source with the digital output according to the IEC audio standard
- source is DVD player (no track information)

No sound
- check the audio connections
- if using an amplifier, try using a different source

Amplifier sound is distorted
- check that the analog output of the set is not connected to the amplifier Phono input

Play will not start
- ensure that the label of the CD is facing up
- clean the disc
- check that the disc is not defective by trying another disc

Remote control does not work
- point the remote control directly at the set
- check the batteries and replace if necessary
- select the right source first

DISC RECOVER **indication**
- a power failure has occurred during recording, the CD recorder is attempting to repair the disc
- if DISC ERROR then appears on the display, the disc cannot be recorded further, and cannot be finalised. But it can still be played on the CD recorder or another CD recorder.
- on a CDRW disc, the track being recorded is lost, but further recording and finalisation can still be done

INSERT DISC **indication**
- replace or clean the disc
- insert a CD(RW), label upwards
- wait until the lens has cleared

USE AUDIO CD **indication**
- insert a digital audio disc marked with "Digital audio" and the special logo

CHECK INPUT **indication**
- select the correct input
- make sure the connection cable is properly connected

Will not record
- clean the disc
- check if CDR(W) is an unfinalised disc
- check that the disc is recordable and replace if necessary
- the disc is not an AUDIO disc (WRONG DISC)
- wrong input source chosen. Input label flashing (CHECK INPUT)
- text memory full (MEMORY FULL / FINALIZE CD). When a CDRW has to be unfinalised for recording. Erase text for other disc(s) or finalise other disc(s) to obtain memory space

Recording is distorted
- make sure the recording level is correct

20 second pause between recordings
- see "Recording with automatic synchronized start"

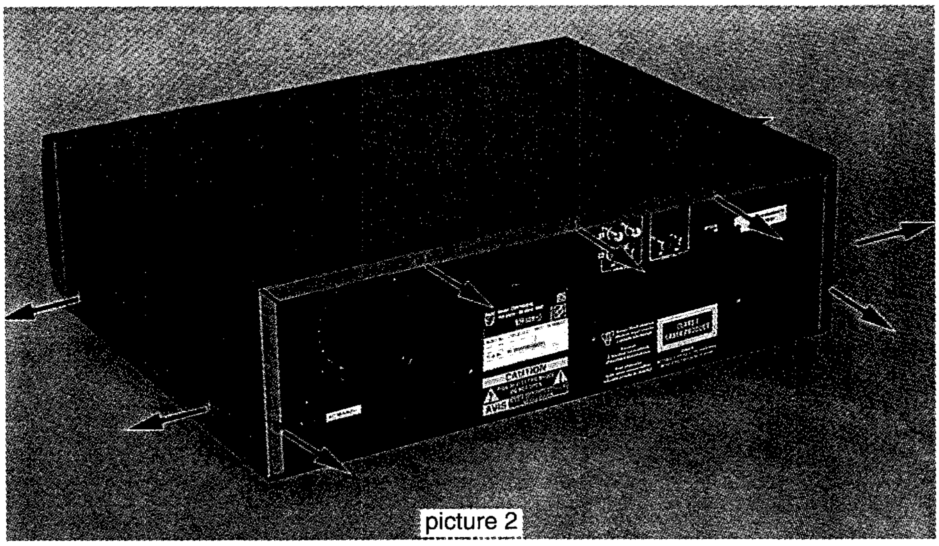
Set does not react
- switch the set OFF and then immediately back ON

Recorded disc does not play in other standard CD player
- finalize the CDR(W)
- insert the CDRW in a CDRW compatible player

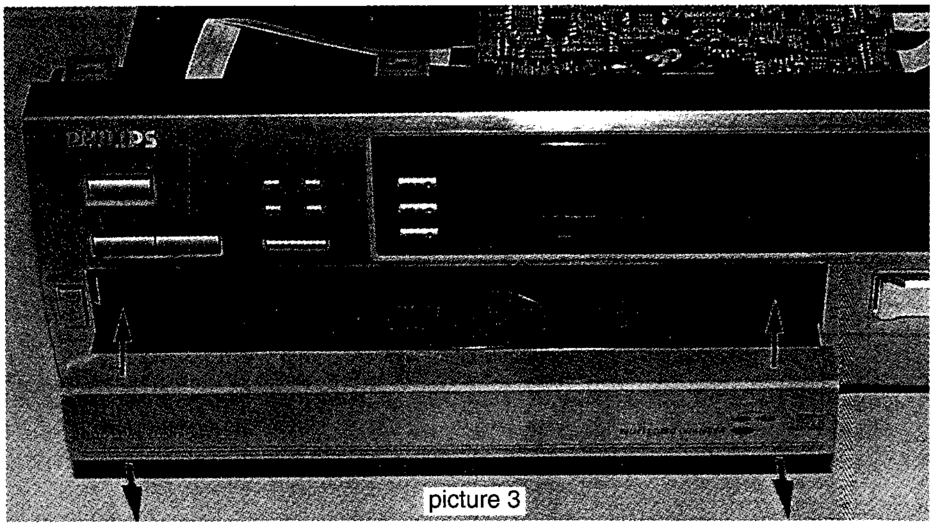
DISMANTLING INSTRUCTIONS

Dismantling the *Top Cover*

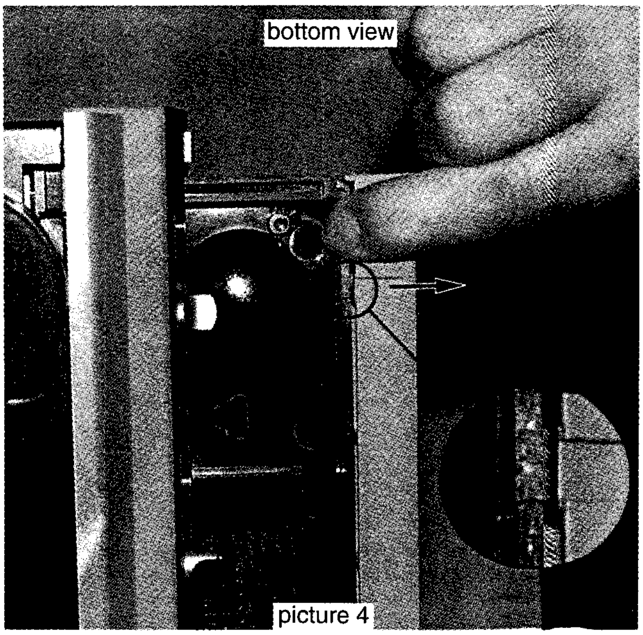
- Remove 9 screws as shown in picture 2.
- Raise top cover at the rear and pull it backwards.


picture 2

Dismantling the *Tray Cover*


picture 3

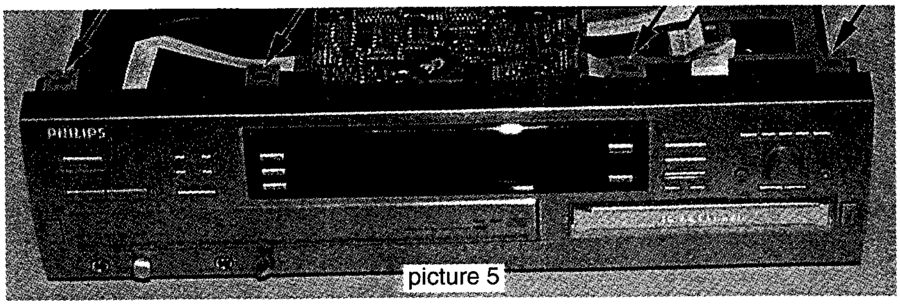
- To release the cover from the catch on the tray pull it frontwards on bottom side as shown in picture 4.
- Pull the cover up.



picture 4

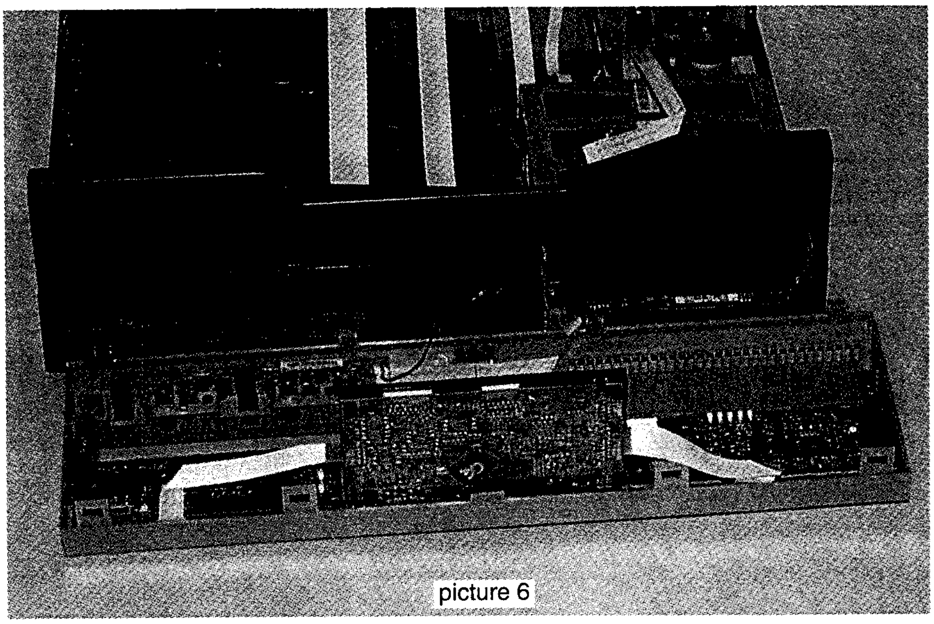
DISMANTLING INSTRUCTIONS

Dismantling the *Front Cabinet*



picture 5

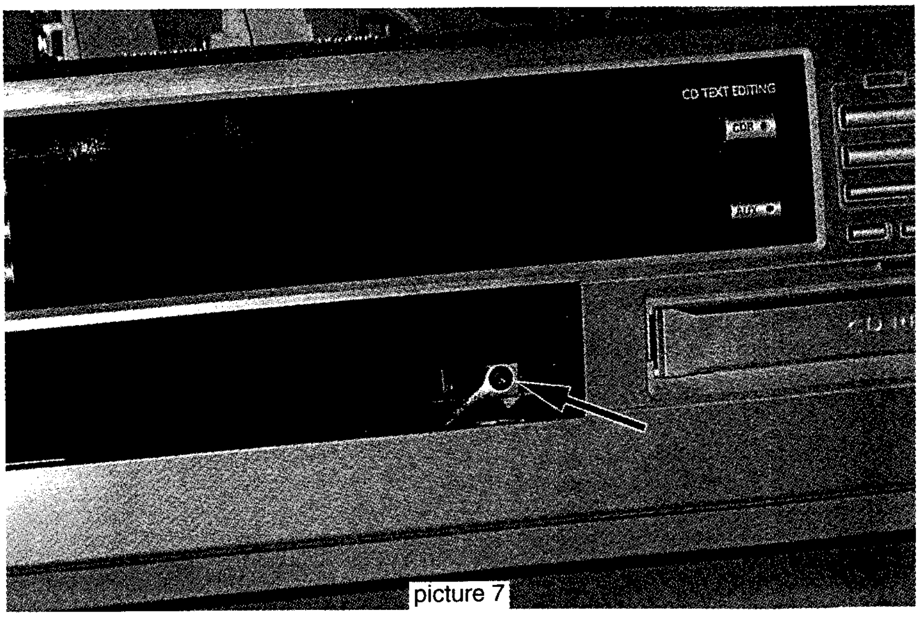
- Remove tray cover first → see description before.
- Disconnect flexfoil cables to interface board and CDR module.
- Release catches on top as shown in picture 5 and turn front cabinet away.
  Take care of the flexfoil cables connecting the key boards!
- Place front cabinet as shown in picture 6.



picture 6

Dismantling the *3CDC module*

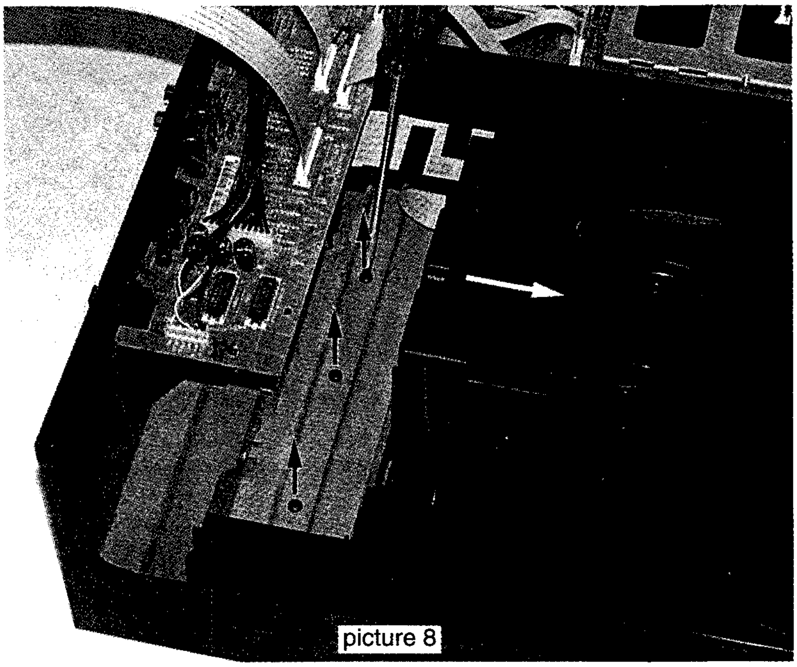
- Remove screw on front side first → see pictures 7.

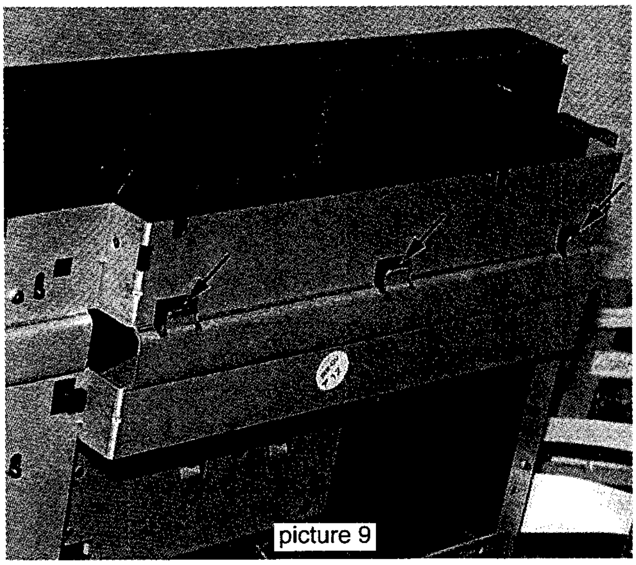


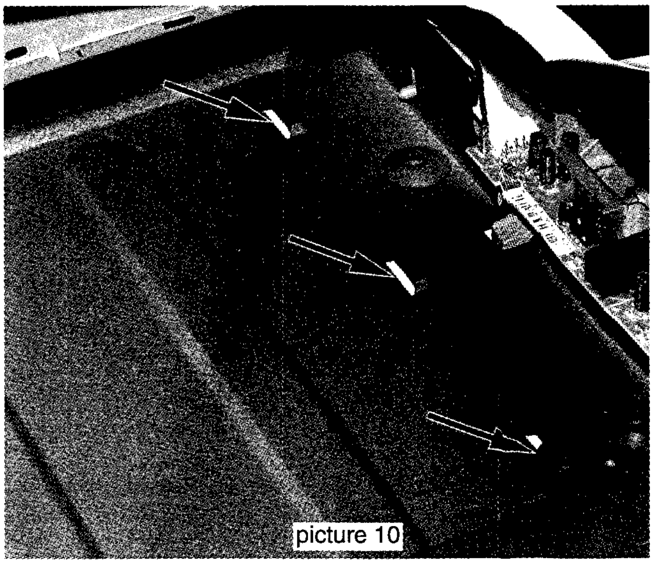
picture 7

Dismantling the *CDC module*
continued

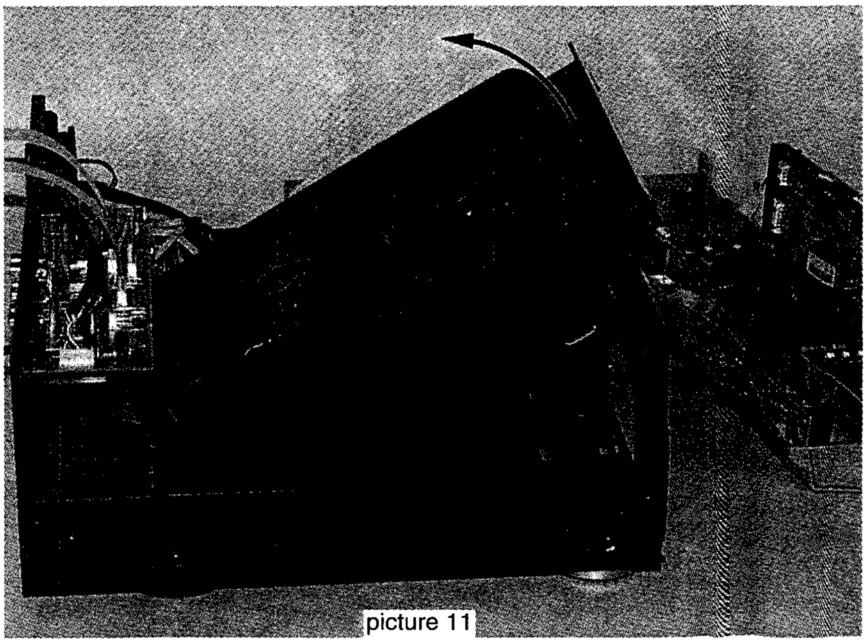
- Dismantle front cabinet as described before.
- Move the tray a few centimetres out to get access to the fastening screws at the rear.
- Remove the 3 screws as shown in picture 8.
- Put the tray back and move the complete module backwards to release catches on bottom cabinet. → for orientation see picture 9 and 10.


picture 8

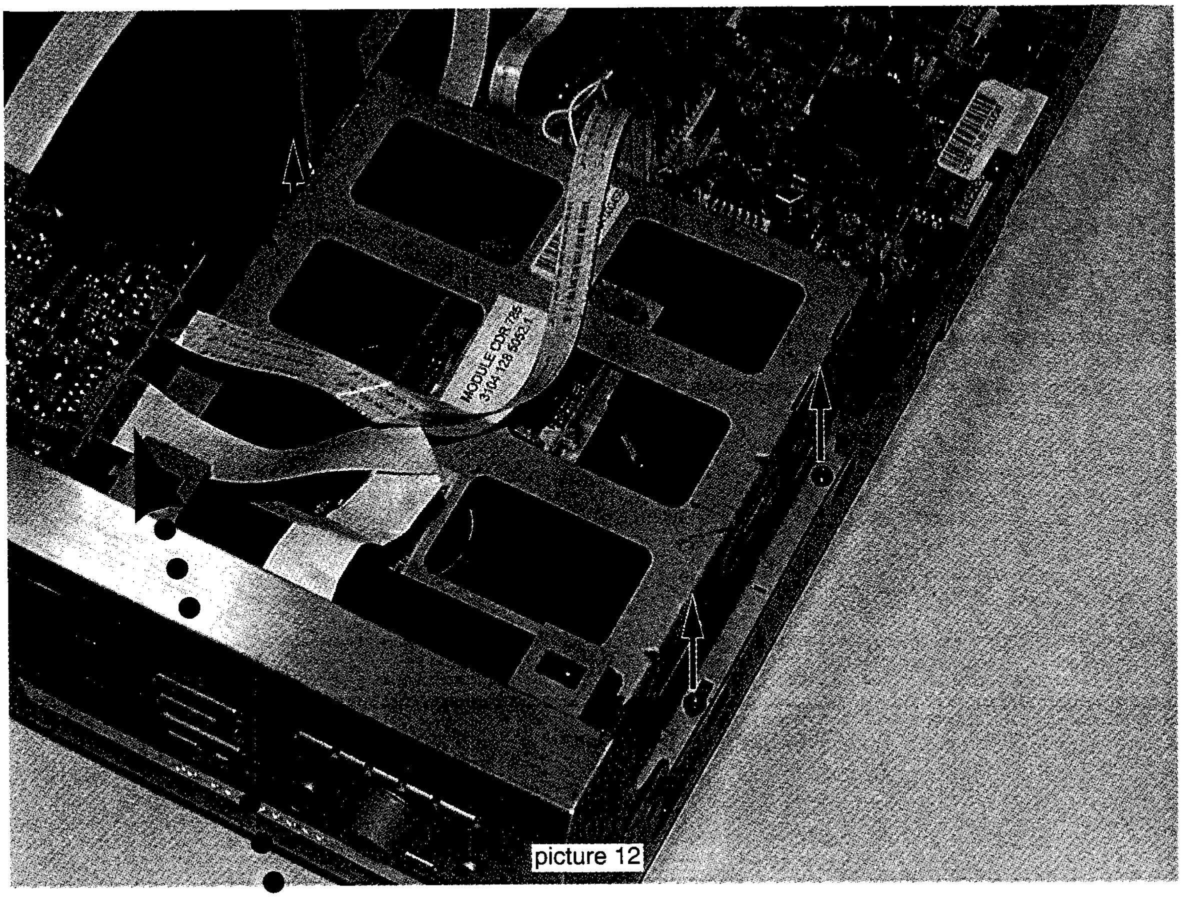

picture 9


picture 10

- Pull the module on front side up and turn it out as shown in picture 10.
- Put the module to a proper service position. → see also chapter SERVICE HINTS
- To get the set operating mount front cabinet and connect flexfoil cables to front board again.

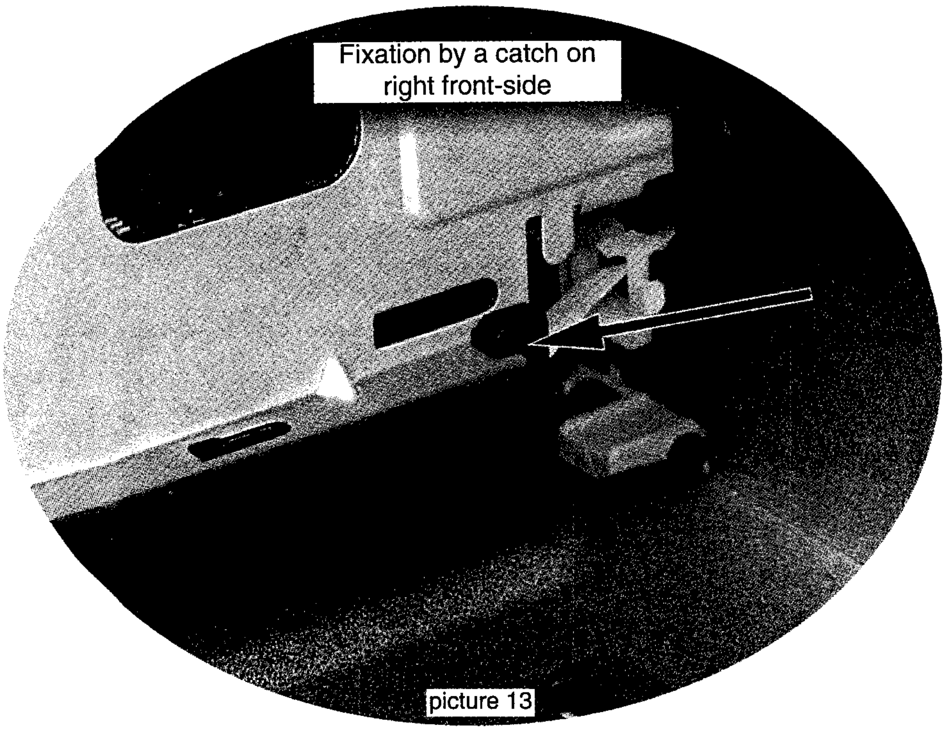

picture 11

Dismantling the *CDR module*



picture 12

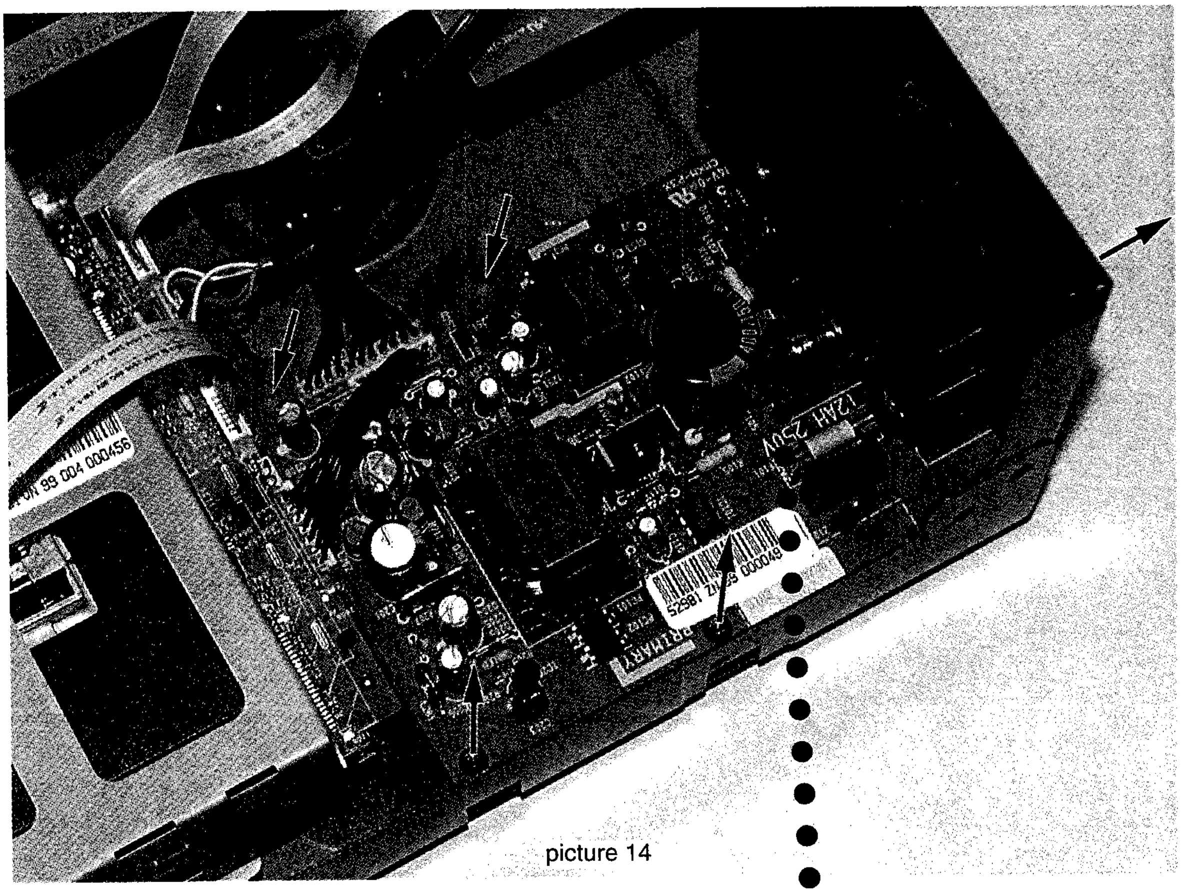
- Remove 3 screws as as indicated in picture 12.
- Disconnect all cables.
- Move the module backwards to release the catch on pos. 205 (see exploded view)
- Raise the module on the rear and turn it out.



Fixation by a catch on right front-side

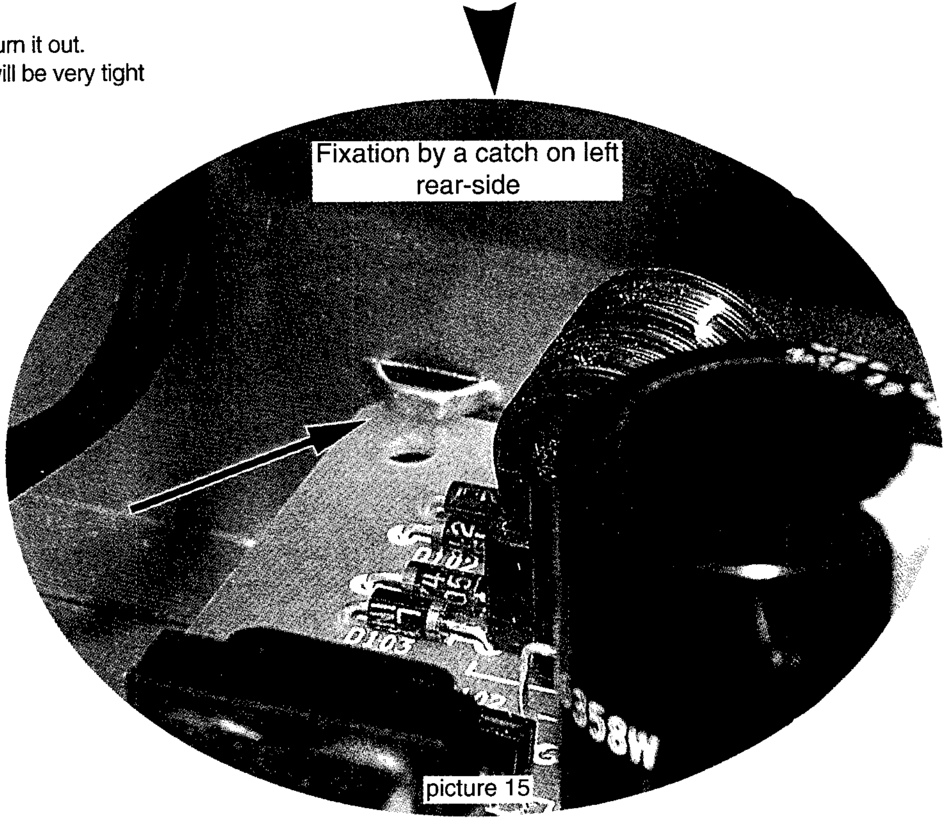
picture 13

Dismantling the *Power board*



picture 14

- Disconnect all cables.
- Remove 3 screws as as indicated in picture 14.
- Release the catches on the plastic supports.
- Move the board backwards to release the catch on left front-side.
- Lift the module on the rear and turn it out.
  remark: space to CDR module will be very tight



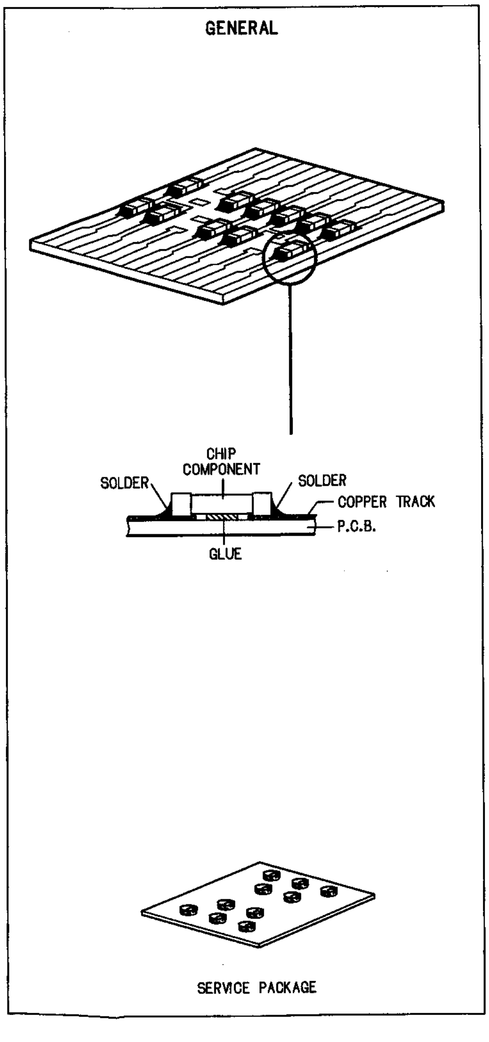
Fixation by a catch on left rear-side

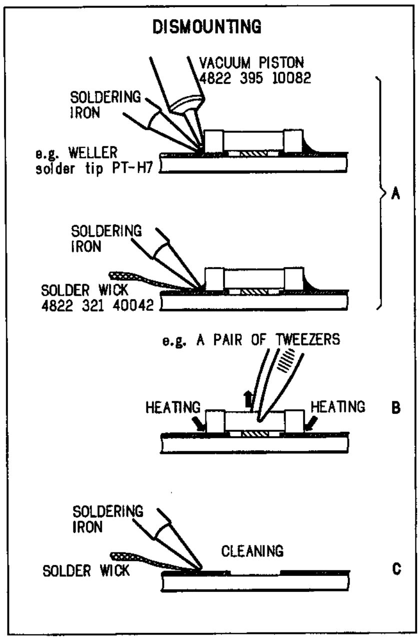
picture 15

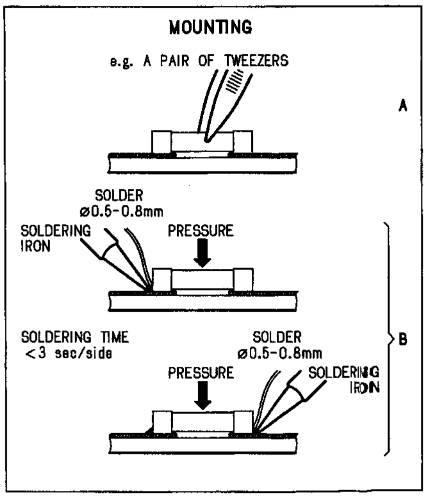
SERVICE TOOLS

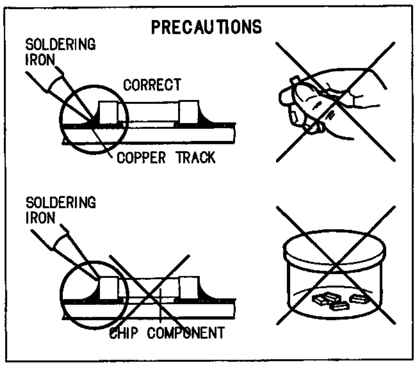
TORX T10 screwdriver with shaftlength 150mm	4822 395 50423
TORX screwdriver set SBC 163	4822 295 50145
Audio signal disc SBC 429	4822 397 30184
Playability test disc SBC444	4822 397 30245
Test disc 5 (disc without errors) + **Test disc 5A** (disc with dropout errors, black spots and fingerprints) SBC 426/426A	4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30dB level without "pause")	4822 397 30155

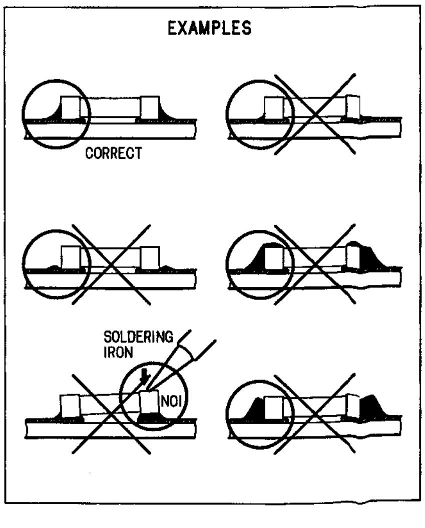
HANDLING CHIP COMPONENTS


GENERAL
CHIP COMPONENT
SOLDER
SOLDER
COPPER TRACK
P.C.B.
GLUE
SERVICE PACKAGE


DISMOUNTING
VACUUM PISTON 4822 395 10082
SOLDERING IRON
e.g. WELLER solder tip PT-H7
A
SOLDERING IRON
SOLDER WICK 4822 321 40042
e.g. A PAIR OF TWEEZERS
HEATING
HEATING
B
SOLDERING IRON
CLEANING
SOLDER WICK
C

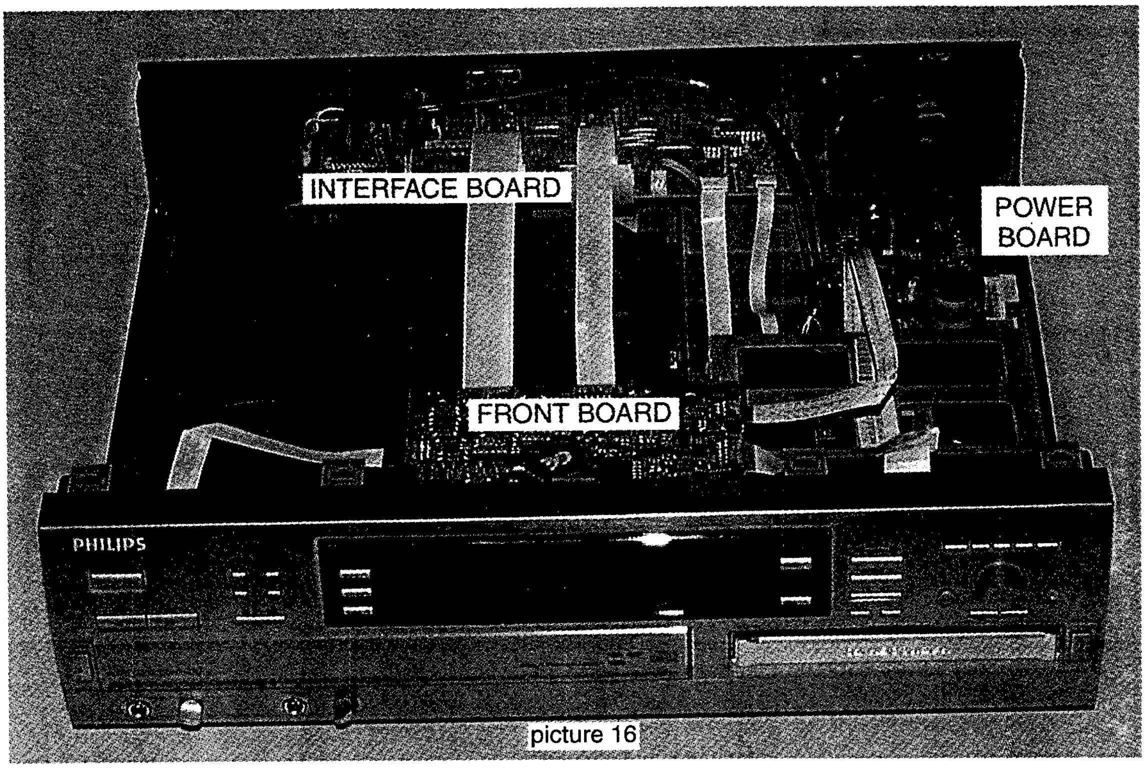

MOUNTING
e.g. A PAIR OF TWEEZERS
A
SOLDER ⌀0.5-0.8mm
SOLDERING IRON
PRESSURE
SOLDERING TIME <3 sec/side
SOLDER ⌀0.5-0.8mm
PRESSURE
SOLDERING IRON
B


PRECAUTIONS
SOLDERING IRON
CORRECT
COPPER TRACK
SOLDERING IRON
CHIP COMPONENT


EXAMPLES
CORRECT
SOLDERING IRON
NO!

General Service position

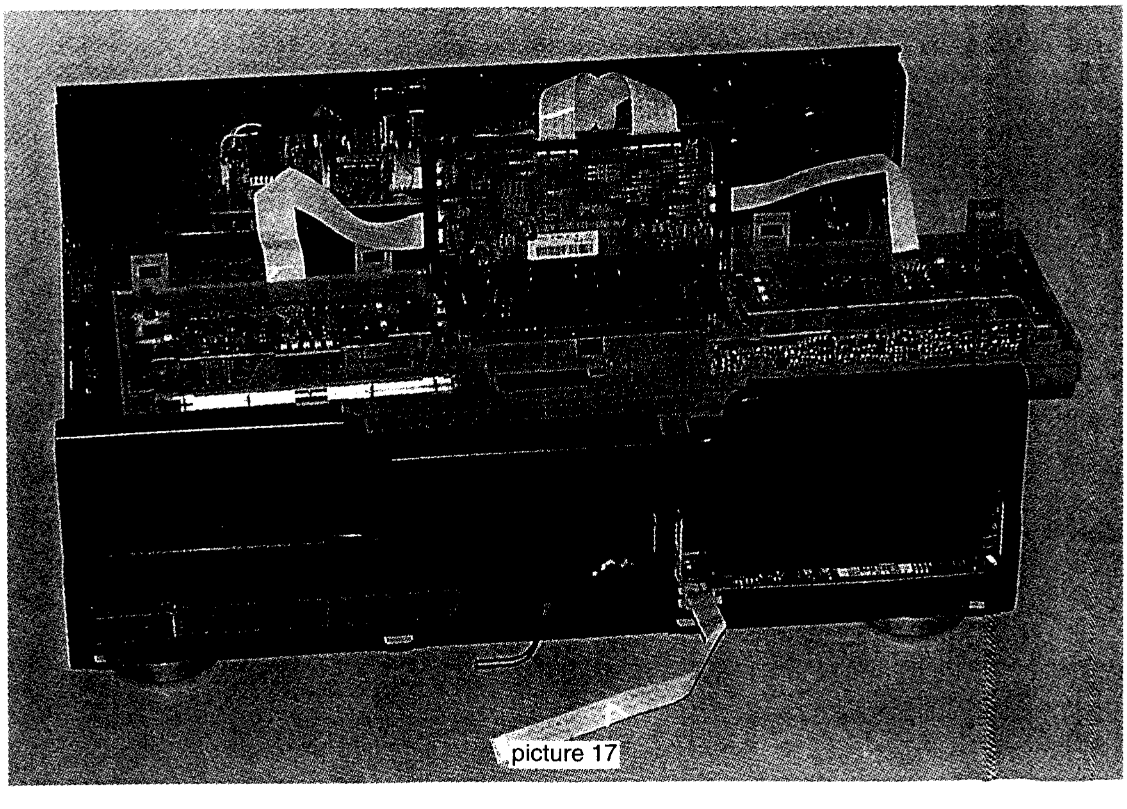
For repairs on: Front Board
Power Board
Interface Board


INTERFACE BOARD
POWER BOARD
FRONT BOARD
PHILIPS

picture 16

Service position *Key Boards*

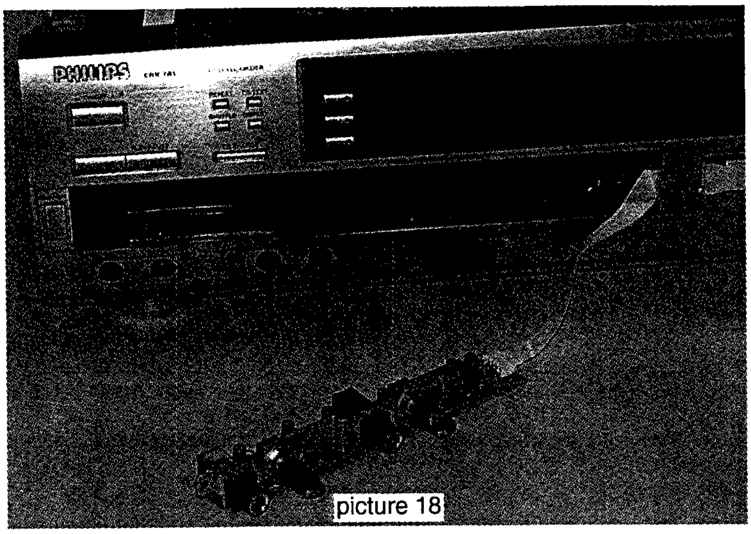
After dismantling the front cabinet as described in chapter 4-2 the front unit can be placed on 3CDC- and CDR module and be re-connected again.



picture 17

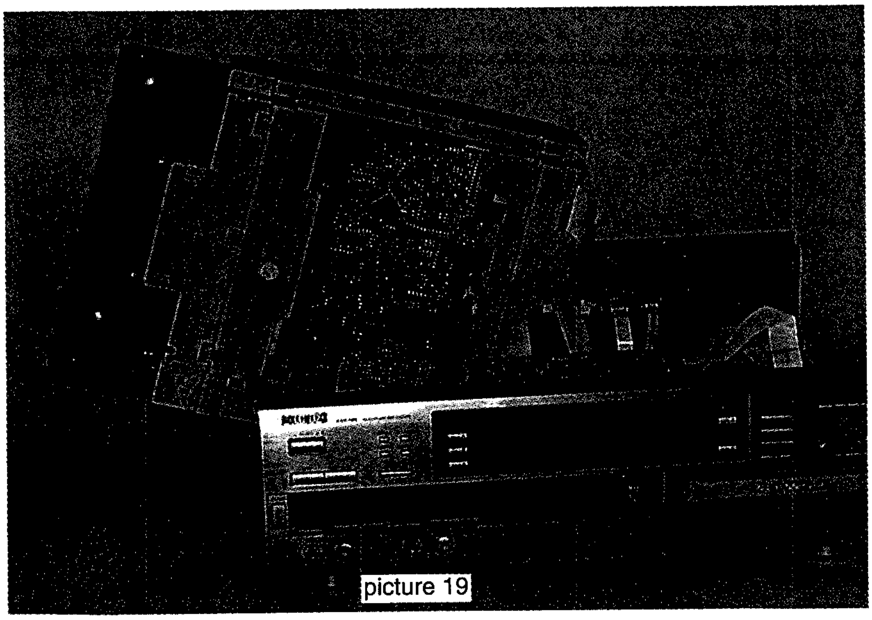
Service position *Headphone/Microphone Board*

- Dismantle front cabinet as described in chapter 4-2.
- Dismantle Headphone/Microphone Board and put it through the opening for the 3CDC-tray in front cabinet.
- Mount front cabinet provisional and re-connect flexfoil cables to Front Board.



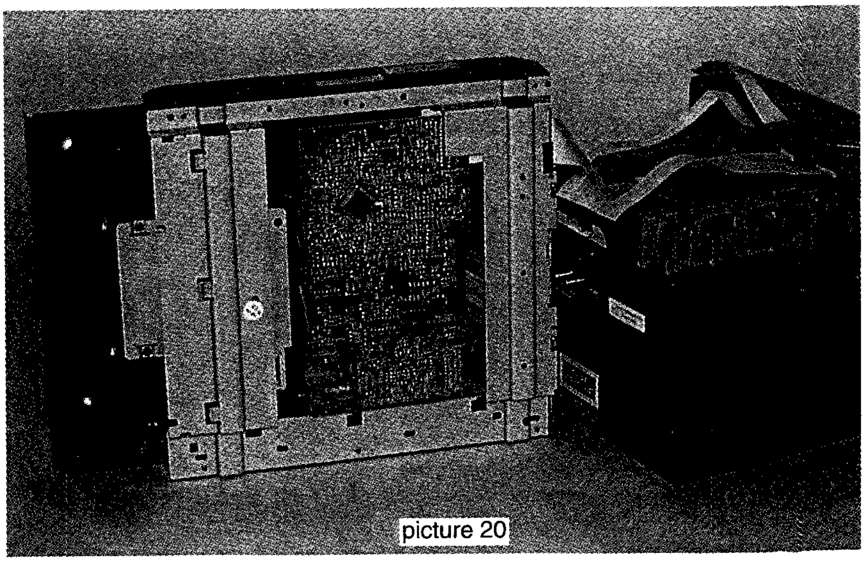
picture 18

Service position *3CDC Module*



picture 19

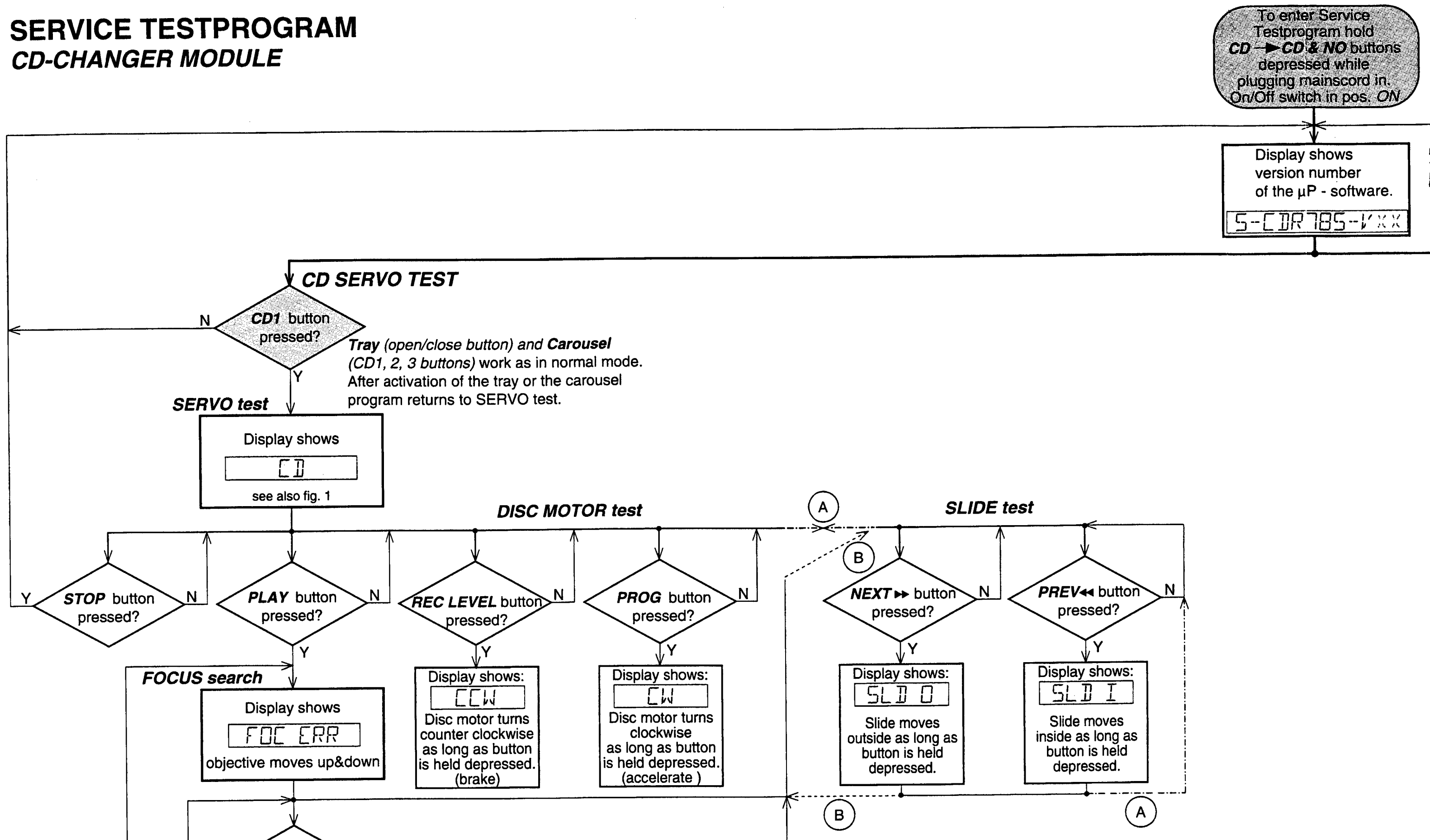
Dismantle the 3CDC module as described in chapter 4-2 to 4-3 and place it in the desired service position.



picture 20

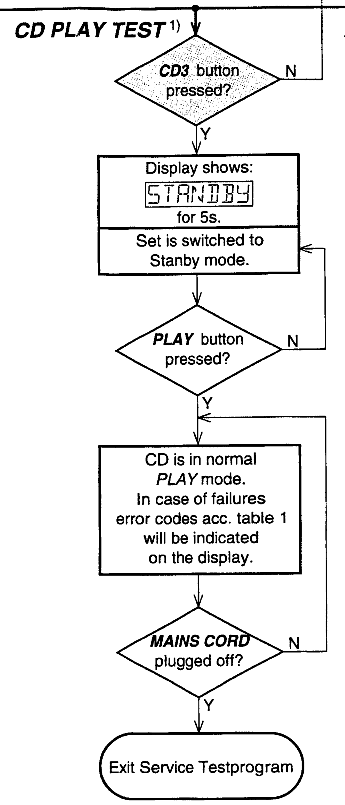
SERVICE TESTPROGRAM
CD-CHANGER MODULE

* To leave Service Testprogram plug mains cord off.

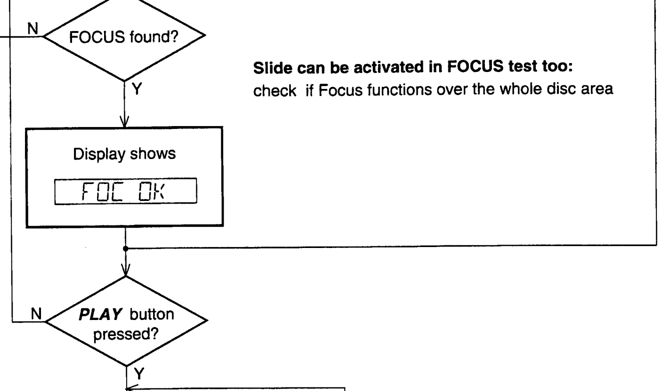

To enter Service Testprogram hold CD ➝ CD & NO buttons depressed while plugging mainscord in. On/Off switch in pos. ON
Display shows version number of the µP - software.
5-CDR785-Vxx
CD SERVO TEST
CD1 button pressed?
N
Y
SERVO test
Display shows
CD
see also fig. 1
DISC MOTOR test
SLIDE test
A
B
STOP button pressed?
PLAY button pressed?
REC LEVEL button pressed?
PROG button pressed?
NEXT ▸▸ button pressed?
PREV ◂◂ button pressed?
FOCUS search
Display shows
FOC ERR
objective moves up&down
Display shows:
CCW
Disc motor turns counter clockwise as long as button is held depressed. (brake)
Display shows:
CW
Disc motor turns clockwise as long as button is held depressed. (accelerate)
Display shows:
SLD O
Slide moves outside as long as button is held depressed.
Display shows:
SLD I
Slide moves inside as long as button is held depressed.

Tray (open/close button) and ***Carousel*** *(CD1, 2, 3 buttons)* work as in normal mode. After activation of the tray or the carousel program returns to SERVO test.

S stands for Service mode
Vxx stands for version number of the software used in the front µP.

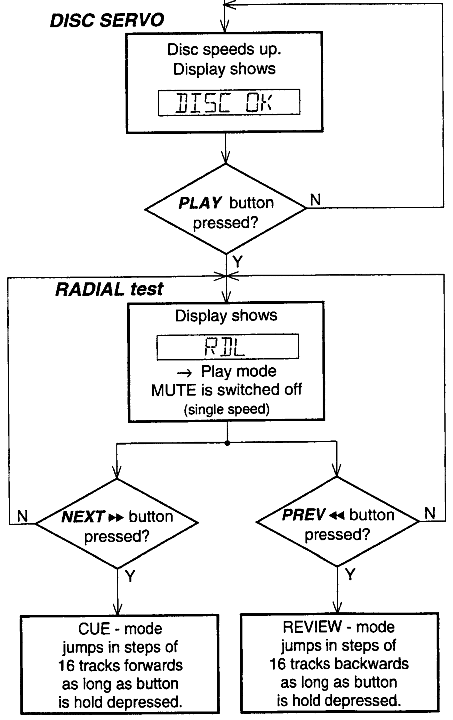

CD PLAY TEST 1)
CD3 button pressed?
N
Y
Display shows:
STANDBY
for 5s.
Set is switched to Stanby mode.
PLAY button pressed?
N
Y
CD is in normal PLAY mode. In case of failures error codes acc. table 1 will be indicated on the display.
MAINS CORD plugged off?
N
Y
Exit Service Testprogram

[1] The *CD PLAY TEST* is intended to be used for continuously playing a disc in order to detect intermittent or not reproducible failures. The error code indicates where the failure can be found.


FOCUS found?
N
Y
Display shows
FOC OK
PLAY button pressed?
N
Y

Slide can be activated in FOCUS test too:
check if Focus functions over the whole disc area

STOP button pressed in FOCUS- or RADIAL-test returns to SERVO-test


DISC SERVO
Disc speeds up. Display shows
DISC OK
PLAY button pressed?
N
Y
RADIAL test
Display shows
RDL
→ Play mode MUTE is switched off (single speed)
NEXT ▸▸ button pressed?
PREV ◂◂ button pressed?
N
Y
CUE - mode jumps in steps of 16 tracks forwards as long as button is hold depressed.
REVIEW - mode jumps in steps of 16 tracks backwards as long as button is hold depressed.

Purpose of RADIAL test:

To check if the Audio signal is reproduced. Subcode info is ignored during this test → If the CD player functions well in this testmode, but not in the normal Play mode check quality of the eye-pattern signal. Display shows absolute playing time of the disc in order one can determine position of the slide. If the playing time is not shown (display flickers) the pickup is possibly out of the program area of the disc. Press ***Next*** or ***Prev*** to move slide inside.

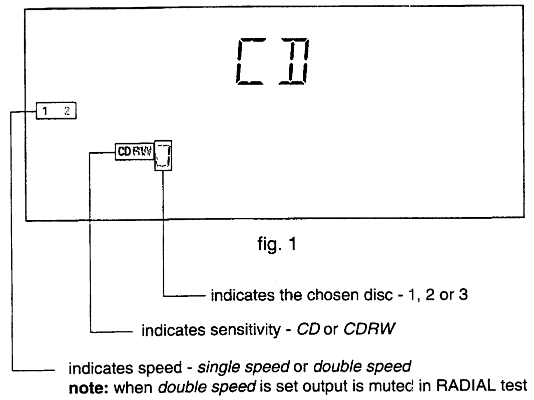


fig. 1

indicates the chosen disc - 1, 2 or 3
indicates sensitivity - *CD* or *CDRW*
indicates speed - *single speed* or *double speed*
note: when *double speed* is set output is muted in RADIAL test

Single/double speed In the steps ***SERVO test*** and ***FOCUS search*** the disc speed can be toggled manually between single speed (1x) and double speed (2x) with the ***TEXT*** button. Flag 1 or 2 of the music calendar indicates the actual speed.

Since the CD-RW reflects much less light than an ordinary CD-DA the gain of the HF-amplifier stage and the sensitivity of the ADC inside the Signal Processor must be increased to find the focus point. In normal play mode high/low - gain is switched automatically. In Service Test Mode, with the ***TRACK EDIT*** button, the gain/sensitivity can be toggled manually between high or low as soon as the SERVO test has been entered. When the set is switched to high gain, **RW** flag is indicated on the display.
NOTE: If sensitivity is switched to *CDRW* the set might not work with normal Audio CDs!

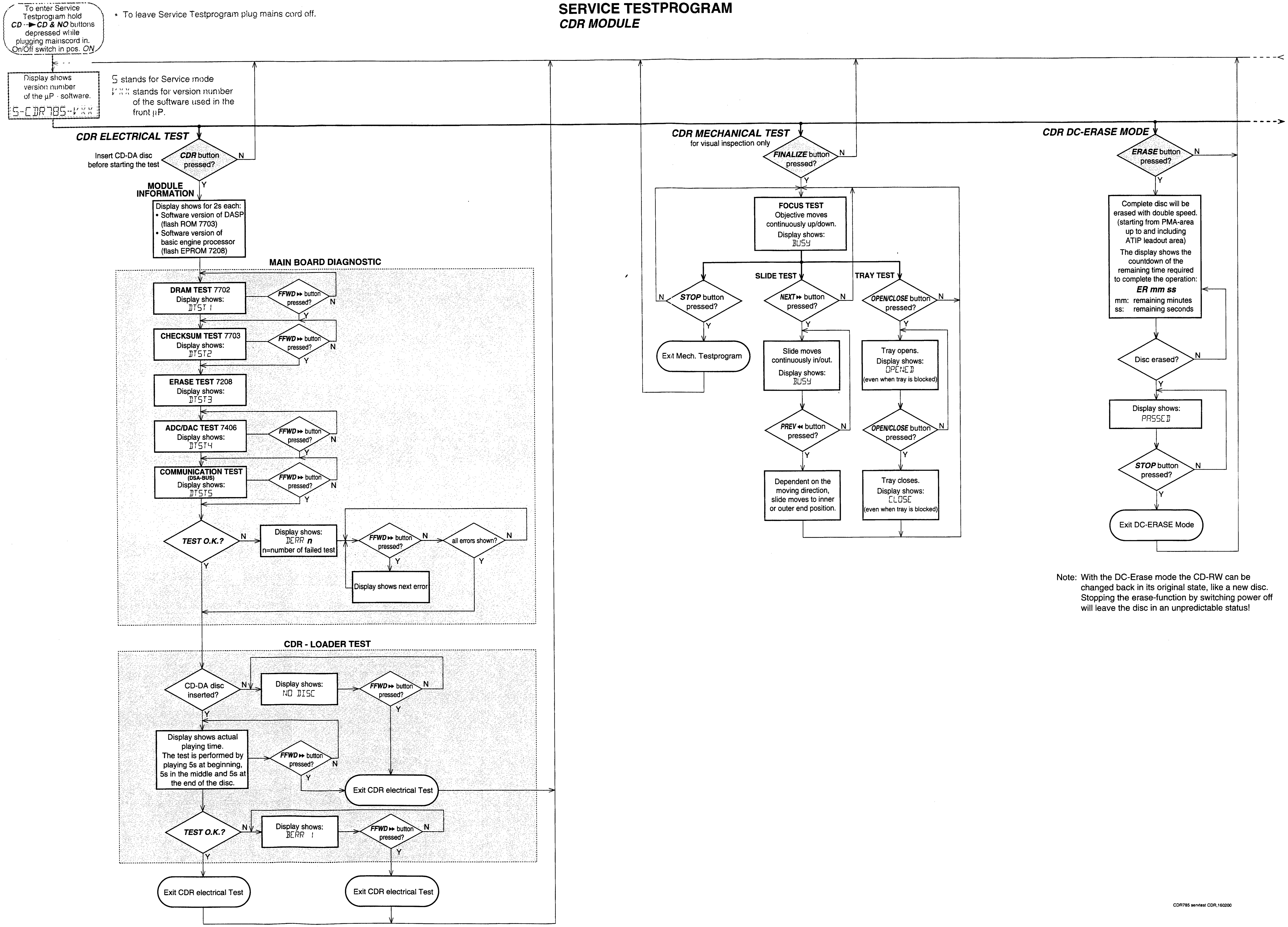
CD ERROR CODES

Error number	*Error description*	*Error type*
E1000	**Focus Error** Triggered when the focus is lost for more than 250ms while playing the CD.	W
E1001	**Radial error** Triggered when the radial servo is not on track for a certain time during playing the CD.	W
E1002	**Slide-in error** Generated when the inner-switch did not close within approx. 6s when the pick up is moved inside. Inner-switch or slide motor problems.	W
E1003	**Slide-out error** Generated when the inner-switch did not open within approx. 250ms when the pick up is moved from the inner position outside. Inner-switch or slide motor problems.	W
E1005	**Jump error.** Triggered when the servo processor counts too less tracks in a defined time during JUMPS. This can be caused by a disturbed HF-signal (the tracks cannot be recognized exactly), slide motor problems, track servo problems or scratched discs.	W
E1006	**Subcode Error** No valid subcode for 300ms during *PLAY*.	W
E1007	**PLL lock error** When no valid subcode was found within 300ms PLL is checked. If PLL is locked E1006 will be indicated else E1007 and the servo is stopped and restarted once again to recover (as if the user would have pressed *STOP* and then *PLAY* immediately).	W
E1008	**Disc motor error** Generated when the CD could not reach 75% of speed during startup within 1,2s.	W
E1020	**Focus Search Error** Triggered when the focus could not be found within 4s when starting up the CD.	F

table 1

Error type: W = Warning → set continues operation, message remains on the display until next error occurs or any key is pressed.
F = Fatal Error → set stops operation, message remains on the display.

SERVICE TESTPROGRAM
CDR MODULE


To enter Service Testprogram hold **CD → CD & NO** buttons depressed while plugging mainscord in. On/Off switch in pos. *ON*
* To leave Service Testprogram plug mains cord off.
Display shows version number of the µP - software.
S-CDR785-VXX
S stands for Service mode
VXX stands for version number of the software used in the front µP.
CDR ELECTRICAL TEST
Insert CD-DA disc before starting the test
CDR button pressed?
N
Y
MODULE INFORMATION
Display shows for 2s each:
• Software version of DASP (flash ROM 7703)
• Software version of basic engine processor (flash EPROM 7208)
MAIN BOARD DIAGNOSTIC
DRAM TEST 7702 Display shows: DTST 1
FFWD ▸▸ button pressed?
CHECKSUM TEST 7703 Display shows: DTST2
ERASE TEST 7208 Display shows: DTST3
ADC/DAC TEST 7406 Display shows: DTST4
COMMUNICATION TEST (DSA-BUS) Display shows: DTST5
TEST O.K.?
Display shows: DERR n
n=number of failed test
all errors shown?
Display shows next error
CDR - LOADER TEST
CD-DA disc inserted?
Display shows: NO DISC
Display shows actual playing time. The test is performed by playing 5s at beginning, 5s in the middle and 5s at the end of the disc.
Exit CDR electrical Test
Display shows: DERR 1
CDR MECHANICAL TEST
for visual inspection only
FINALIZE button pressed?
FOCUS TEST
Objective moves continuously up/down.
Display shows: BUSY
STOP button pressed?
Exit Mech. Testprogram
SLIDE TEST
NEXT ▸▸ button pressed?
Slide moves continuously in/out.
Display shows: BUSY
PREV ◂◂ button pressed?
Dependent on the moving direction, slide moves to inner or outer end position.
TRAY TEST
OPEN/CLOSE button pressed?
Tray opens. Display shows: OPENED (even when tray is blocked)
Tray closes. Display shows: CLOSE (even when tray is blocked)
CDR DC-ERASE MODE
ERASE button pressed?
Complete disc will be erased with double speed. (starting from PMA-area up to and including ATIP leadout area)
The display shows the countdown of the remaining time required to complete the operation:
ER mm ss
mm: remaining minutes
ss: remaining seconds
Disc erased?
Display shows: PASSED
STOP button pressed?
Exit DC-ERASE Mode

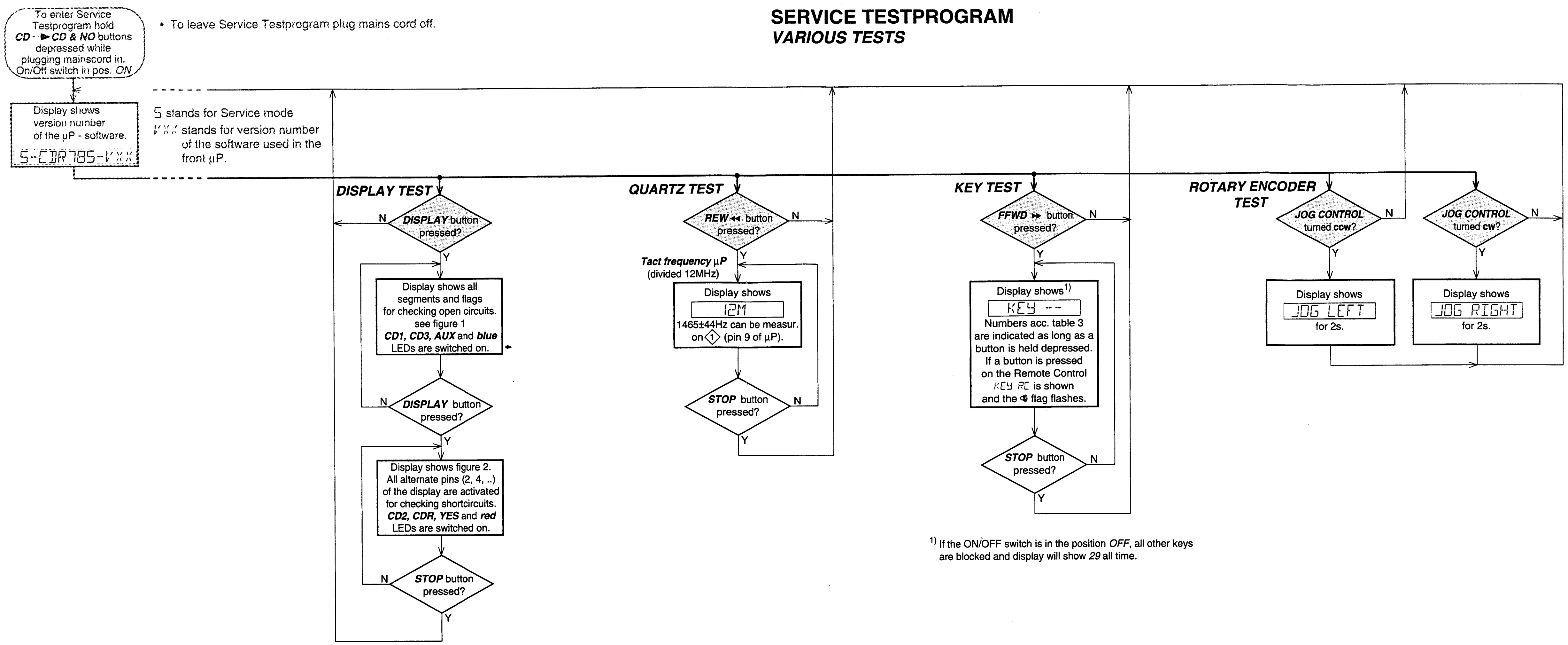
Note: With the DC-Erase mode the CD-RW can be changed back in its original state, like a new disc. Stopping the erase-function by switching power off will leave the disc in an unpredictable status!

CDR785 servtest CDR,160200

SERVICE TESTPROGRAM

VARIOUS TESTS

* To leave Service Testprogram plug mains cord off.



To enter Service Testprogram hold ***CD → CD & NO*** buttons depressed while plugging mainscord in. On/Off switch in pos. *ON*

Display shows version number of the µP - software. S-CDR785-VXX

S stands for Service mode

VXX stands for version number of the software used in the front µP.

DISPLAY TEST

DISPLAY button pressed?

Display shows all segments and flags for checking open circuits. see figure 1 ***CD1, CD3, AUX*** and ***blue*** LEDs are switched on.

DISPLAY button pressed?

Display shows figure 2. All alternate pins (2, 4, ..) of the display are activated for checking shortcircuits. ***CD2, CDR, YES*** and ***red*** LEDs are switched on.

STOP button pressed?

QUARTZ TEST

REW ◂◂ button pressed?

Tact frequency µP (divided 12MHz)

Display shows 12M 1465±44Hz can be measur. on ① (pin 9 of µP).

STOP button pressed?

KEY TEST

FFWD ▸▸ button pressed?

Display shows[1] KEY -- Numbers acc. table 3 are indicated as long as a button is held depressed. If a button is pressed on the Remote Control KEY RC is shown and the 🔊 flag flashes.

STOP button pressed?

ROTARY ENCODER TEST

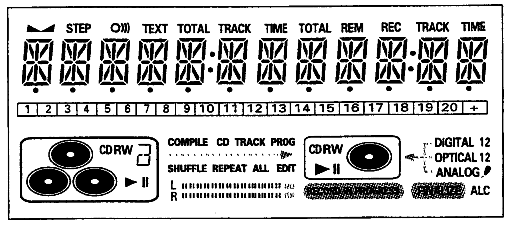
JOG CONTROL turned **ccw**?

Display shows JOG LEFT for 2s.

JOG CONTROL turned **cw**?

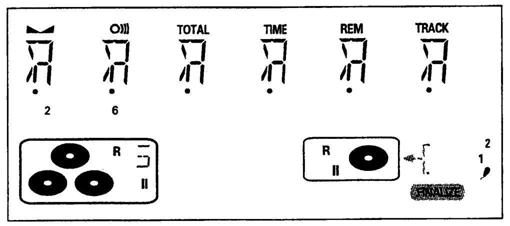
Display shows JOG RIGHT for 2s.

[1] If the ON/OFF switch is in the position *OFF*, all other keys are blocked and display will show *29* all time.



STEP
TEXT
TOTAL
TRACK
TIME
TOTAL
REM
REC
TRACK
TIME
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 +
CDRW
COMPILE CD TRACK PROG
SHUFFLE REPEAT ALL EDIT
CDRW
DIGITAL 12
OPTICAL 12
ANALOG
L
R
RECORD IN PROGRESS
FINALIZE
ALC

fig. 1



TOTAL
TIME
REM
TRACK
2
6
R
R
2
1
FINALIZE

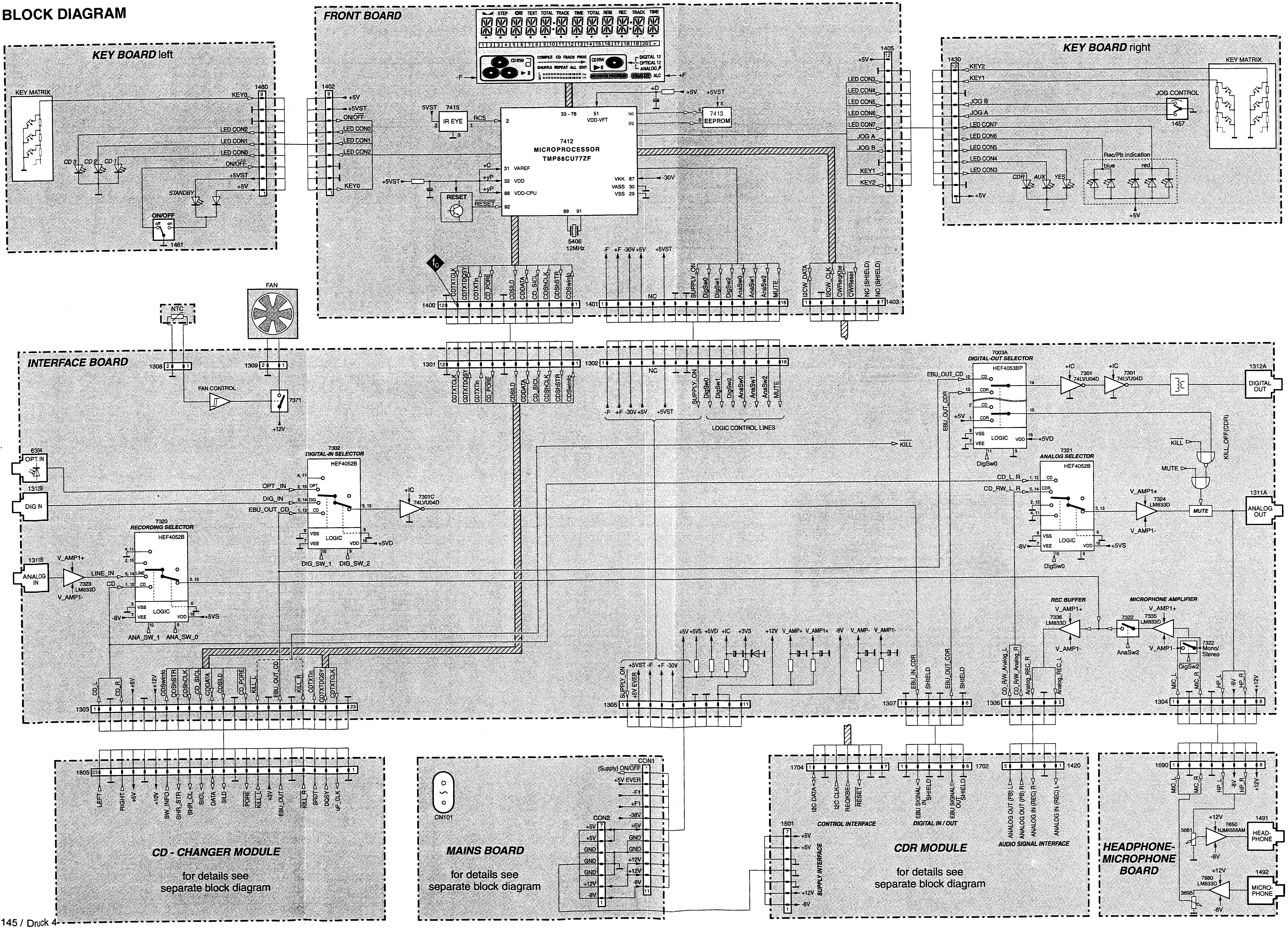
fig. 2

KEY CODES

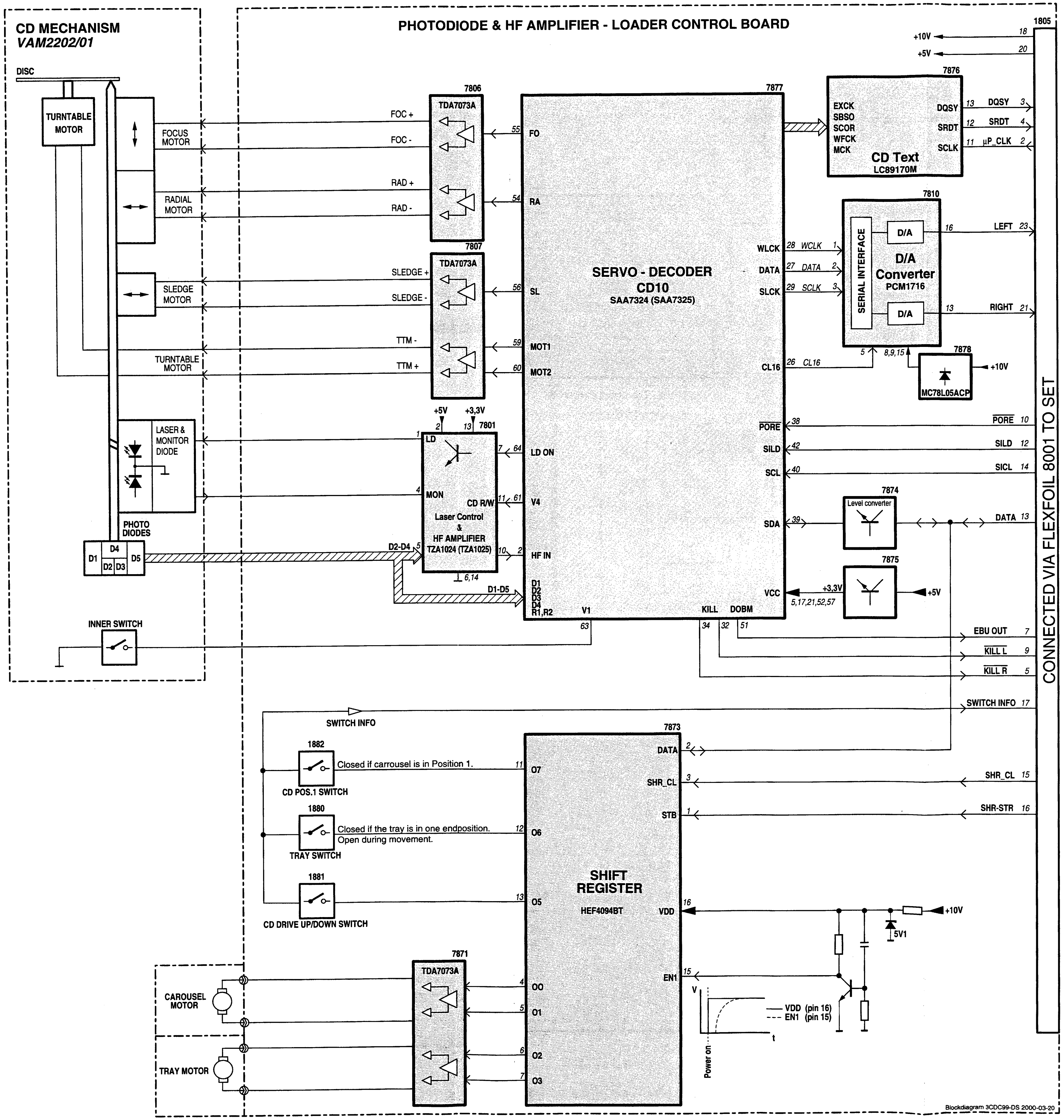
KEY	KEY CODE	KEY	KEY CODE
STOP	exit test	CD ⟶ CD	15
TRACK EDIT	1	CDR	16
PROGRAM	2	AUX	17
TEXT	3	CD3	18
BALANCE	4	CD2	19
REC LEVEL	5	CD1	20
YES	6	CD TEXT	21
NO	7	REPEAT	22
FFWD ▸▸	8	DISPLAY	23
REW ◂◂	9	SHUFFLE	24
OPEN/CLOSE (CDR)	10	CD CHANGE	25
FINALIZE	11	PLAY/PAUSE	26
ERASE	12	OPEN/CLOSE (CDC)	27
REC TYPE	13	ON/OFF	29
COMPILE CD	14		

table 2

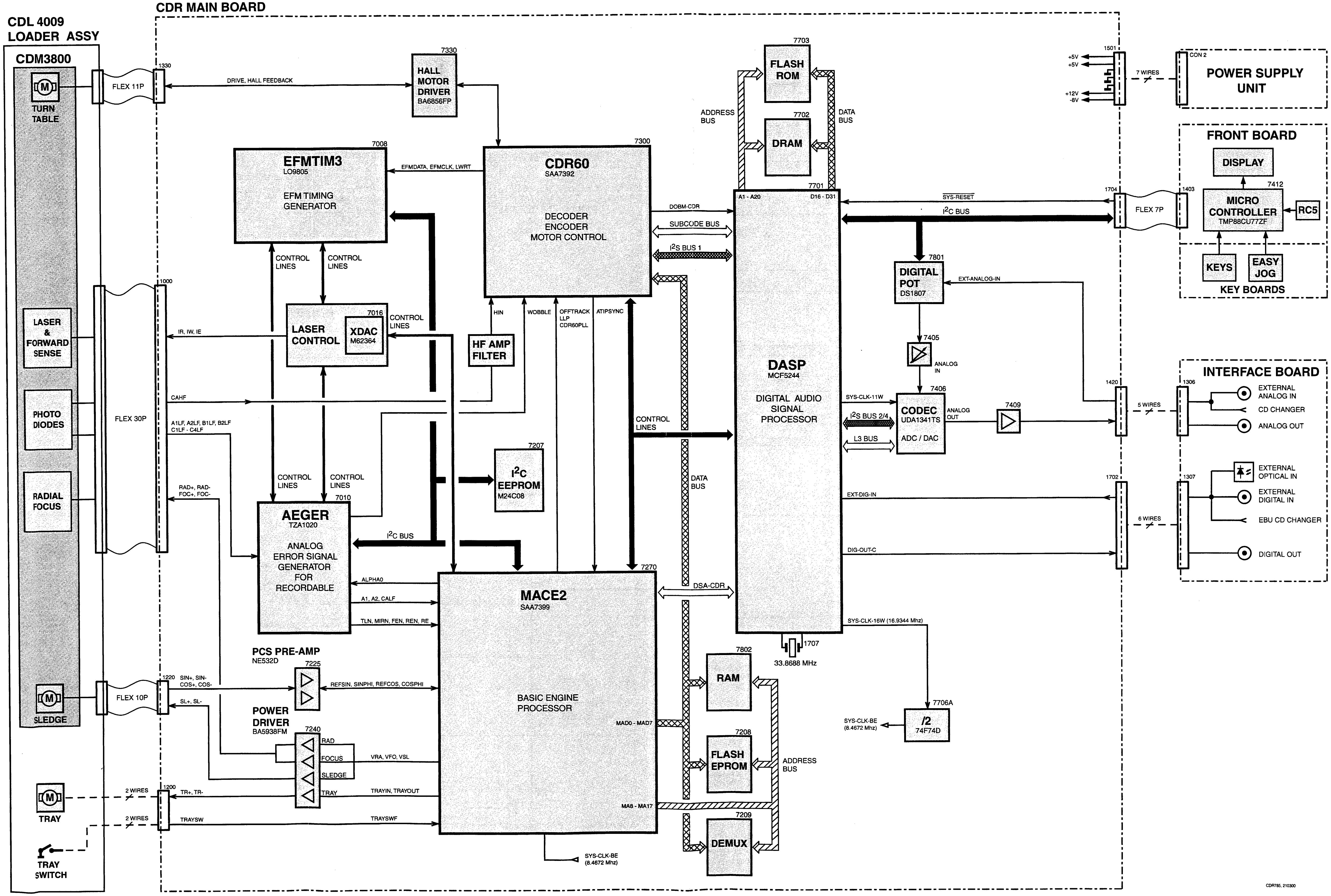
BLOCK DIAGRAM


KEY BOARD left
KEY MATRIX
1480
KEY0
LED CON2
LED CON1
LED CON0
ON/OFF
+5VST
+5V
CD 3
CD 2
CD 1
STANDBY
ON/OFF
off
on
1481
FRONT BOARD
1402
+5V
+5VST
ON/OFF
LED CON0
LED CON1
LED CON2
KEY0
STEP
TEXT
TOTAL
TRACK
TIME
REM
REC
CD RW
COMPILE
SHUFFLE
REPEAT
ALL
EDIT
DIGITAL 12
OPTICAL 12
ANALOG
ALC
-F
+F
+D
+5V
+5VST
5VST
7415
IR EYE
RC5
7412
MICROPROCESSOR
TMP88CU77ZF
33 - 76
51
VDD-VFT
VAREF
VDD
VDD-CPU
VKK
VASS
VSS
-30V
+C
+yP
+5VST
RESET
7413
EEPROM
5406
12MHz
1405
LED CON3
LED CON4
LED CON5
LED CON6
LED CON7
JOG A
JOG B
KEY1
KEY2
CDTXTCLK
CDTXTDOSY
CDTXTin
CD_PORE
CDSILD
CDDATA
CD_SICL
CDShCLK
CDShSTR
CDSwInfo
1400
1401
NC
SUPPLY_ON
DigSw0
DigSw1
DigSw2
AnaSw0
AnaSw1
AnaSw2
MUTE
-F
+F
+5V
I2CW_DATA
I2CW_CLK
CWRedkOe
CWReset
NC (SHIELD)
1403
KEY BOARD right
1430
KEY2
KEY1
JOG B
JOG A
LED CON7
LED CON6
LED CON5
LED CON4
LED CON3
+5V
KEY MATRIX
JOG CONTROL
1457
Rec/Pb indication
blue
red
CDR
AUX
YES
FAN
NTC
INTERFACE BOARD
1308
1309
FAN CONTROL
7371
+12V
1301
1302
LOGIC CONTROL LINES
KILL
6304
OPT. IN
1312B
DIG IN
7302
DIGITAL-IN SELECTOR
HEF4052B
OPT_IN
DIG_IN
EBU_OUT_CD
LOGIC
VSS
VEE
VDD
+5VD
DIG_SW_1
DIG_SW_2
+IC
7301C
74LVU04D
7320
RECORDING SELECTOR
HEF4052B
1311B
ANALOG IN
V_AMP1+
V_AMP1-
7323
LM833D
LINE_IN
CD
-8V
+5VS
ANA_SW_1
ANA_SW_0
7003A
DIGITAL-OUT SELECTOR
HEF4053BP
EBU_OUT_CD
EBU_OUT_CDR
CDR
DigSw0
7301
74LVU04D
1312A
DIGITAL OUT
KILL_OFF(CDR)
MUTE
7321
ANALOG SELECTOR
HEF4052B
CD_L_R
CD_RW_L_R
7324
LM833D
1311A
ANALOG OUT
REC BUFFER
7336
LM833D
MICROPHONE AMPLIFIER
7335
LM833D
7322
AnaSw2
Mono/Stereo
DigSw2
+5V
+5VS
+5VD
+3V3
+12V
V_AMP+
V_AMP1+
-8V
V_AMP-
V_AMP1-
CD_L
CD_R
KILL_L
KILL_R
EBU_OUT_CD
1303
1305
SUPPLY_ON
+5V EVER
+5VST
1307
EBU_IN_CDR
SHIELD
EBU_OUT_CDR
1306
CD_RW_Analog_L
CD_RW_Analog_R
Analog_REC_R
Analog_REC_L
1304
MIC_L
MIC_R
HP_L
HP_R
1805
LEFT
RIGHT
+10V
SW_INFO
SHR_STR
SHR_CL
SICL
DATA
SILD
PORE
+3V
EBU_OUT
SRDT
DQSY
uP_CLK
CD - CHANGER MODULE
for details see separate block diagram
CN101
CON1
(Supply) ON/OFF
+5V EVER
-F1
+F1
-38V
+5V
GND
+12V
-8V
CON2
MAINS BOARD
for details see separate block diagram
1704
I2C DATA
I2C CLK
RECKBEI
RESET
CONTROL INTERFACE
1702
EBU SIGNAL IN
EBU SIGNAL OUT
DIGITAL IN / OUT
1420
ANALOG OUT (PB) L
ANALOG OUT (PB) R
ANALOG IN (REC) R
ANALOG IN (REC) L
AUDIO SIGNAL INTERFACE
1501
SUPPLY INTERFACE
CDR MODULE
for details see separate block diagram
1690
3661
7850
NJM4556AM
1491
HEAD-PHONE
3695
7680
LM833D
1492
MICRO-PHONE
HEADPHONE-MICROPHONE BOARD

BLOCK DIAGRAM *3CDC MODULE*

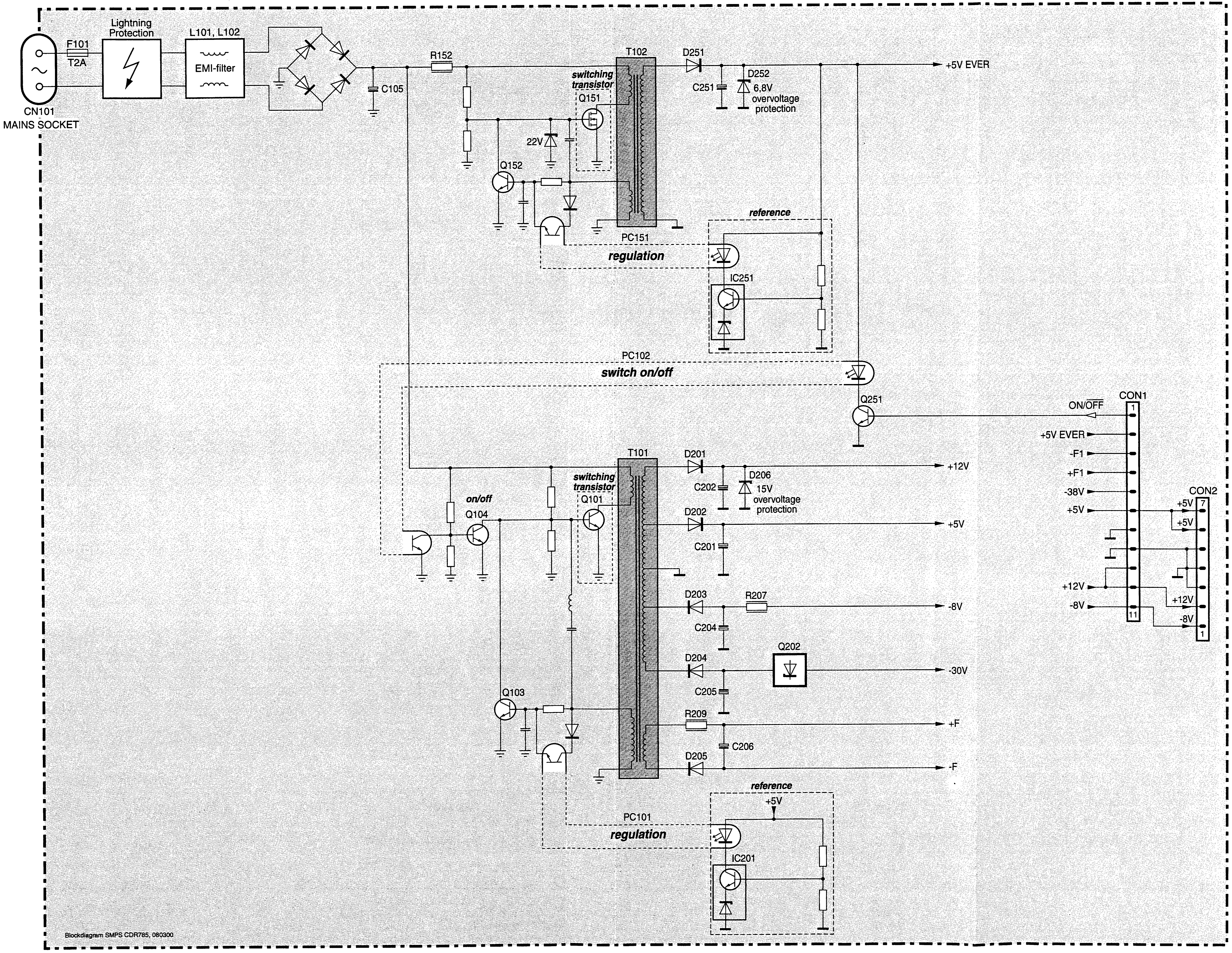

CD MECHANISM
VAM2202/01
DISC
TURNTABLE MOTOR
FOCUS MOTOR
RADIAL MOTOR
SLEDGE MOTOR
TURNTABLE MOTOR
LASER & MONITOR DIODE
PHOTO DIODES
D1
D4
D2
D3
D5
INNER SWITCH
PHOTODIODE & HF AMPLIFIER - LOADER CONTROL BOARD
7806
TDA7073A
FOC +
FOC -
RAD +
RAD -
7807
TDA7073A
SLEDGE +
SLEDGE -
TTM -
TTM +
+5V
+3,3V
7801
LD
MON
CD R/W
Laser Control & HF AMPLIFIER TZA1024 (TZA1025)
D2-D4
D1-D5
6,14
7877
FO
RA
SL
MOT1
MOT2
LD ON
V4
HF IN
D1 D2 D3 D4 R1,R2
V1
SERVO - DECODER CD10
SAA7324 (SAA7325)
WLCK
DATA
SLCK
CL16
PORE
SILD
SCL
SDA
VCC
KILL
DOBM
7876
EXCK
SBSO
SCOR
WFCK
MCK
DQSY
SRDT
SCLK
CD Text
LC89170M
7810
SERIAL INTERFACE
D/A
D/A Converter
PCM1716
D/A
WCLK
DATA
SCLK
CL16
7878
MC78L05ACP
+10V
7874
Level converter
7875
+3,3V
5,17,21,52,57
+5V
1805
+10V
+5V
DQSY
SRDT
µP_CLK
LEFT 23
RIGHT 21
PORE 10
SILD 12
SICL 14
DATA 13
EBU OUT 7
KILL L 9
KILL R 5
SWITCH INFO 17
SHR_CL 15
SHR-STR 16
CONNECTED VIA FLEXFOIL 8001 TO SET
SWITCH INFO
1882
Closed if carrousel is in Position 1.
CD POS.1 SWITCH
1880
Closed if the tray is in one endposition.
Open during movement.
TRAY SWITCH
1881
CD DRIVE UP/DOWN SWITCH
7873
O7
O6
O5
SHIFT REGISTER
HEF4094BT
DATA
SHR_CL
STB
VDD
EN1
+10V
5V1
V
VDD (pin 16)
EN1 (pin 15)
t
Power on
7871
TDA7073A
CAROUSEL MOTOR
TRAY MOTOR
O0
O1
O2
O3
Blockdiagram 3CDC99-DS 2000-03-20

BLOCK DIAGRAM *CDR-MODULE*


CDR MAIN BOARD
CDL 4009
LOADER ASSY
CDM3800
TURN TABLE
LASER & FORWARD SENSE
PHOTO DIODES
RADIAL FOCUS
SLEDGE
TRAY
TRAY SWITCH
FLEX 11P
FLEX 30P
FLEX 10P
1330
1000
1220
1200
2 WIRES
2 WIRES
DRIVE, HALL FEEDBACK
7330
HALL MOTOR DRIVER
BA6856FP
7008
EFMTIM3
LO9805
EFM TIMING GENERATOR
EFMDATA, EFMCLK, LWRT
7300
CDR60
SAA7392
DECODER ENCODER MOTOR CONTROL
CONTROL LINES
CONTROL LINES
CONTROL LINES
LASER CONTROL
7016
XDAC
M62364
IR, IW, IE
CAHF
A1LF, A2LF, B1LF, B2LF
C1LF - C4LF
RAD+, RAD-
FOC+, FOC-
HF AMP FILTER
HIN
WOBBLE
OFFTRACK
LLP
CDR60PLL
ATIPSYNC
7207
I²C EEPROM
M24C08
CONTROL LINES
CONTROL LINES
7010
AEGER
TZA1020
ANALOG ERROR SIGNAL GENERATOR FOR RECORDABLE
I²C BUS
ALPHA0
A1, A2, CALF
TLN, MIRN, FEN, REN, RE
PCS PRE-AMP
NE532D
7225
SIN+, SIN-
COS+, COS-
REFSIN, SINPHI, REFCOS, COSPHI
POWER DRIVER
BA5938FM
7240
SL+, SL-
RAD
FOCUS
SLEDGE
TRAY
VRA, VFO, VSL
TR+, TR-
TRAYIN, TRAYOUT
TRAYSW
TRAYSWF
7270
MACE2
SAA7399
BASIC ENGINE PROCESSOR
MAD0 - MAD7
MA8 - MA17
SYS-CLK-BE
(8.4672 Mhz)
DOBM-CDR
SUBCODE BUS
I²S BUS 1
CONTROL LINES
DATA BUS
DSA-CDR
7703
FLASH ROM
7702
DRAM
ADDRESS BUS
DATA BUS
7701
A1 - A20
D16 - D31
DASP
MCF5244
DIGITAL AUDIO SIGNAL PROCESSOR
1707
33.8688 MHz
7802
RAM
7208
FLASH EPROM
7209
DEMUX
ADDRESS BUS
SYS-RESET
I²C BUS
7801
DIGITAL POT
DS1807
EXT-ANALOG-IN
7405
ANALOG IN
7406
SYS-CLK-11W
I²S BUS 2/4
L3 BUS
CODEC
UDA1341TS
ADC / DAC
ANALOG OUT
7409
EXT-DIG-IN
DIG-OUT-C
SYS-CLK-16W (16.9344 Mhz)
7706A
/2
74F74D
SYS-CLK-BE
(8.4672 Mhz)
1501
+5V
+5V
+12V
-8V
7 WIRES
CON 2
POWER SUPPLY UNIT
FRONT BOARD
DISPLAY
7412
1704
FLEX 7P
1403
MICRO CONTROLLER
TMP88CU77ZF
RC5
KEYS
EASY JOG
KEY BOARDS
1420
5 WIRES
INTERFACE BOARD
1306
EXTERNAL ANALOG IN
CD CHANGER
ANALOG OUT
1702
6 WIRES
1307
EXTERNAL OPTICAL IN
EXTERNAL DIGITAL IN
EBU CD CHANGER
DIGITAL OUT
CDR785, 210300

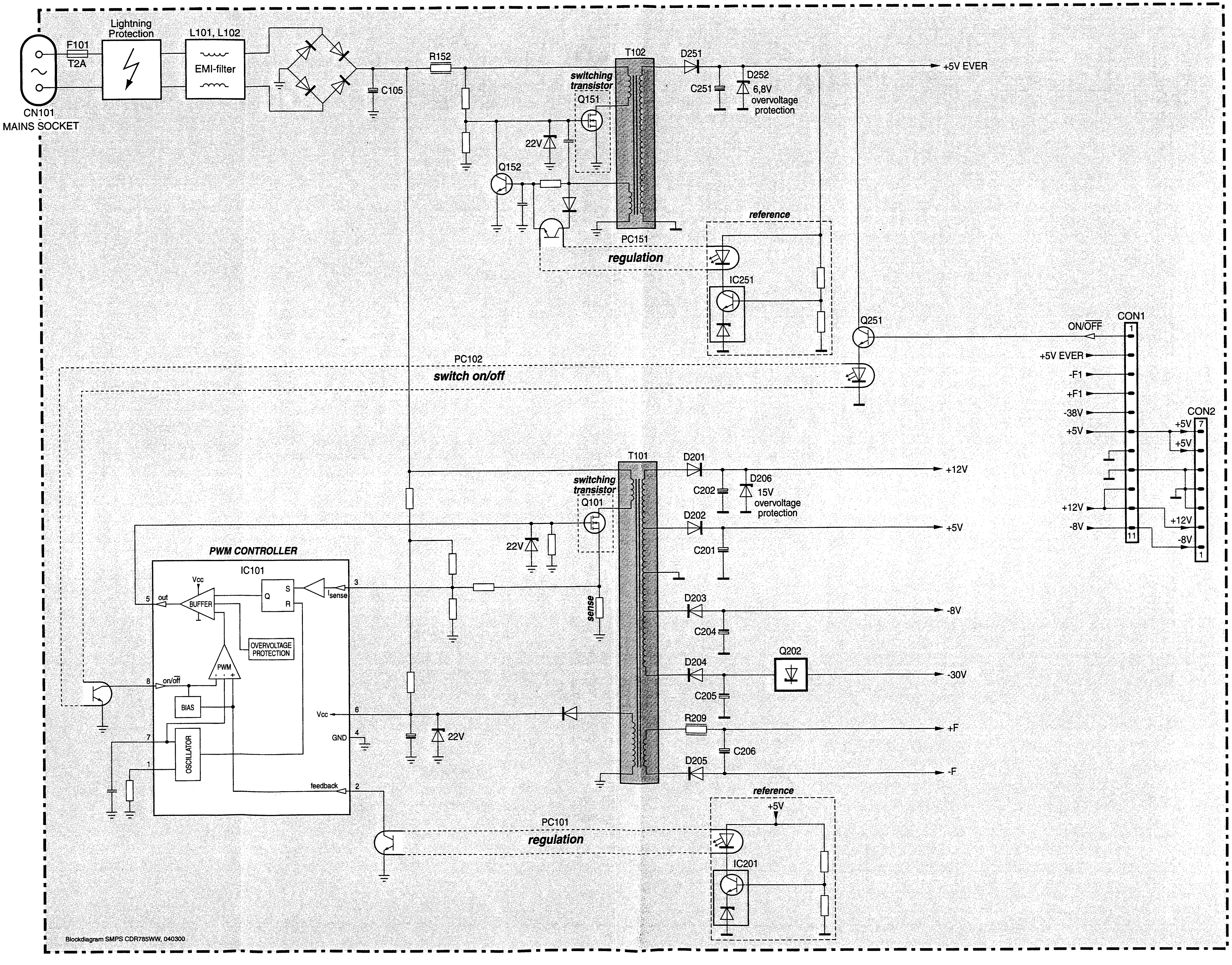
BLOCK DIAGRAM

SWITCHED MODE POWER SUPPLY / European & USA version

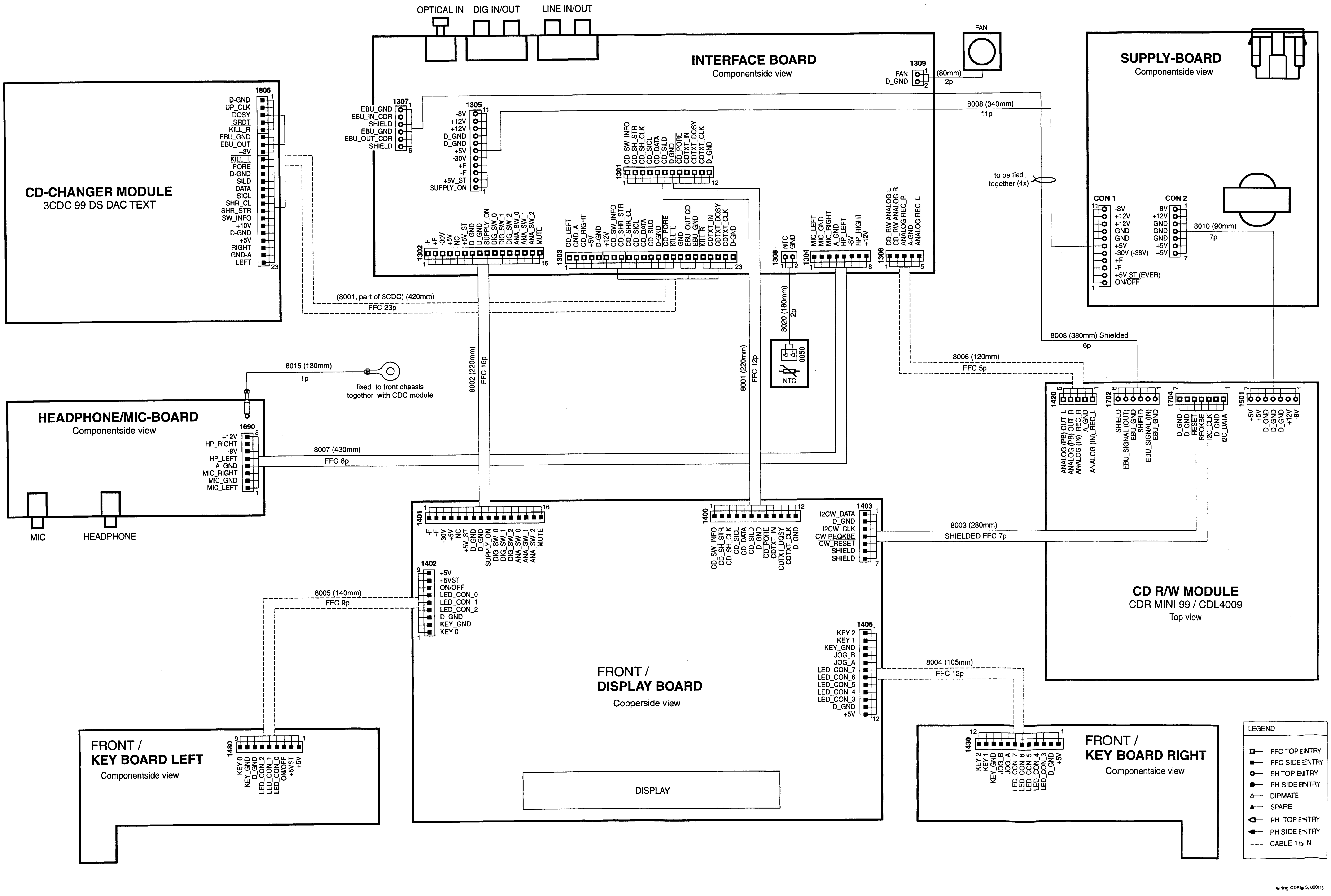

CN101
MAINS SOCKET
F101
T2A
Lightning Protection
L101, L102
EMI-filter
C105
R152
T102
switching transistor
Q151
22V
Q152
D251
+5V EVER
C251
D252
6,8V
overvoltage protection
reference
PC151
regulation
IC251
PC102
switch on/off
Q251
ON/OFF
CON1
1
+5V EVER
-F1
+F1
-38V
+5V
+12V
-8V
11
CON2
7
+5V
+5V
+12V
-8V
1
T101
switching transistor
Q101
on/off
Q104
D201
+12V
C202
D206
15V
overvoltage protection
D202
+5V
C201
D203
R207
-8V
C204
Q202
D204
-30V
C205
R209
+F
C206
D205
-F
Q103
reference
+5V
PC101
regulation
IC201
Blockdiagram SMPS CDR785, 080300

BLOCK DIAGRAM

SWITCHED MODE POWER SUPPLY / WorldWide version


CN101
MAINS SOCKET
F101
T2A
Lightning Protection
L101, L102
EMI-filter
C105
R152
T102
switching transistor
Q151
22V
Q152
PC151
regulation
D251
C251
D252
6,8V
overvoltage protection
+5V EVER
reference
IC251
Q251
PC102
switch on/off
CON1
ON/OFF
+5V EVER
-F1
+F1
-38V
+5V
+12V
-8V
1
11
CON2
+5V
+5V
+12V
-8V
7
1
T101
switching transistor
Q101
22V
D201
+12V
C202
D206
15V
overvoltage protection
D202
+5V
C201
PWM CONTROLLER
IC101
Vcc
BUFFER
S
Q
R
Isense
3
5
out
OVERVOLTAGE PROTECTION
PWM
8
on/off
BIAS
Vcc
6
GND
4
7
1
OSCILLATOR
feedback
2
sense
22V
D203
-8V
C204
D204
Q202
-30V
C205
R209
+F
C206
D205
-F
reference
+5V
PC101
regulation
IC201
Blockdiagram SMPS CDR785WW, 040300

WIRING DIAGRAM

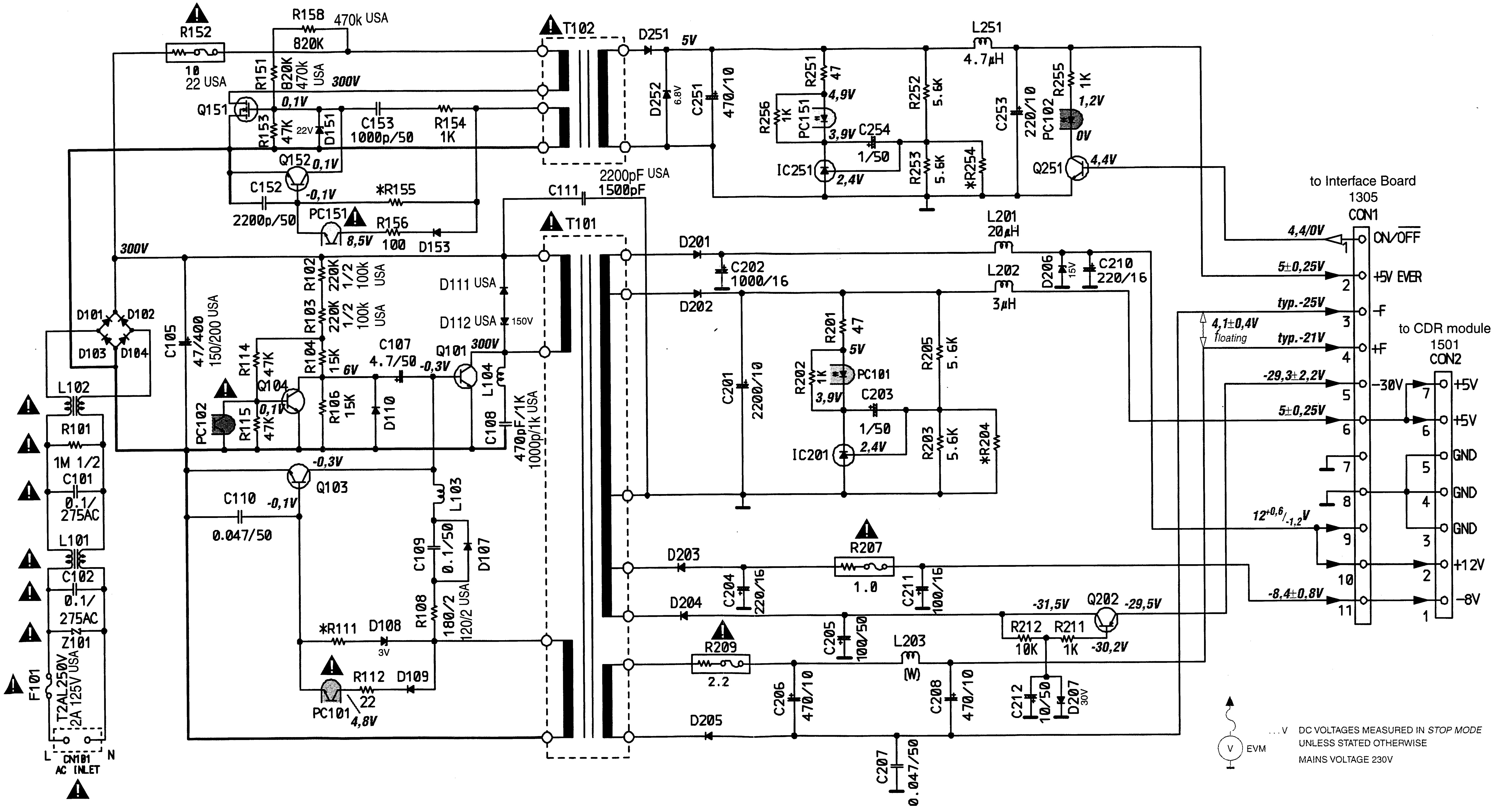

OPTICAL IN
DIG IN/OUT
LINE IN/OUT
FAN
INTERFACE BOARD
Componentside view
1309
FAN
D_GND
(80mm)
2p
SUPPLY-BOARD
Componentside view
CD-CHANGER MODULE
3CDC 99 DS DAC TEXT
1805
D-GND
UP_CLK
DQSY
SRDT
KILL_R
EBU_GND
EBU_OUT
+3V
KILL_L
PORE
D-GND
SILD
DATA
SICL
SHR_CL
SHR_STR
SW_INFO
+10V
D-GND
+5V
RIGHT
GND-A
LEFT
1307
EBU_GND
EBU_IN_CDR
SHIELD
EBU_GND
EBU_OUT_CDR
SHIELD
1305
-8V
+12V
+12V
D_GND
D_GND
+5V
-30V
+F
-F
+5V_ST
SUPPLY_ON
1301
CD_SW_INFO
CD_SH_STR
CD_SH_CLK
CD_SICL
CD_DATA
CD_SILD
D GND
CD_PORE
CDTXT_IN
CDTXT_DQSY
CDTXT_CLK
D_GND
8008 (340mm)
11p
to be tied together (4x)
CON 1
-8V
+12V
+12V
GND
GND
+5V
-30V (-38V)
+F
-F
+5V ST (EVER)
ON/OFF
CON 2
-8V
+12V
GND
GND
GND
+5V
+5V
8010 (90mm)
7p
1302
-F
+F
-30V
+5V
NC
+5V_ST
D_GND
D_GND
SUPPLY_ON
DIG_SW_0
DIG_SW_1
DIG_SW_2
ANA_SW_0
ANA_SW_1
ANA_SW_2
MUTE
1303
CD_LEFT
GND_A
CD_RIGHT
+5V
D-GND
+12V
CD_SW_INFO
CD_SHR_STR
CD_SHR_CL
CD_SICL
CD_DATA
CD_SILD
D-GND
CD_PORE
KILL_L
GND
EBU_OUT CD
EBU_GND
KILL_R
CDTXT_IN
CDTXT_DQSY
CDTXT_CLK
D-GND
1308
NTC
GND
1304
MIC_LEFT
MIC_GND
MIC_RIGHT
A_GND
HP_LEFT
-8V
HP_RIGHT
+12V
1306
CD_RW ANALOG L
CD_RW ANALOG R
ANALOG REC_R
A-GND
ANALOG REC_L
(8001, part of 3CDC) (420mm)
FFC 23p
8020 (180mm)
2p
0050
NTC
8008 (380mm) Shielded
6p
8006 (120mm)
FFC 5p
8002 (220mm)
FFC 16p
8001 (220mm)
FFC 12p
8015 (130mm)
1p
fixed to front chassis together with CDC module
HEADPHONE/MIC-BOARD
Componentside view
1690
+12V
HP_RIGHT
-8V
HP_LEFT
A_GND
MIC_RIGHT
MIC_GND
MIC_LEFT
8007 (430mm)
FFC 8p
MIC
HEADPHONE
1420
ANALOG (PB) OUT L
ANALOG (PB) OUT R
ANALOG (IN)_REC_R
A_GND
ANALOG (IN)_REC_L
1702
SHIELD
EBU_SIGNAL (OUT)
EBU_GND
SHIELD
EBU_SIGNAL (IN)
EBU_GND
1704
D_GND
D_GND
RESET
REQKBE
I2C_CLK
D_GND
I2C_DATA
1501
+5V
+5V
D_GND
D_GND
D_GND
+12V
-8V
1401
-F
+F
-30V
+5V
NC
+5V_ST
D_GND
D_GND
SUPPLY_ON
DIG_SW_0
DIG_SW_1
DIG_SW_2
ANA_SW_0
ANA_SW_1
ANA_SW_2
MUTE
1400
CD_SW_INFO
CD_SH_STR
CD_SH_CLK
CD_SICL
CD_DATA
CD_SILD
D_GND
CD_PORE
CDTXT_IN
CDTXT_DQSY
CDTXT_CLK
D_GND
1403
I2CW_DATA
D_GND
I2CW_CLK
CW REQKBE
CW_RESET
SHIELD
SHIELD
8003 (280mm)
SHIELDED FFC 7p
CD R/W MODULE
CDR MINI 99 / CDL4009
Top view
1402
+5V
+5VST
ON/OFF
LED_CON_0
LED_CON_1
LED_CON_2
D_GND
KEY_GND
KEY 0
8005 (140mm)
FFC 9p
1405
KEY 2
KEY 1
KEY_GND
JOG_B
JOG_A
LED_CON_7
LED_CON_6
LED_CON_5
LED_CON_4
LED_CON_3
D_GND
+5V
8004 (105mm)
FFC 12p
FRONT / DISPLAY BOARD
Copperside view
DISPLAY
FRONT / KEY BOARD LEFT
Componentside view
1480
KEY 0
KEY_GND
D_GND
LED_CON_2
LED_CON_1
LED_CON_0
ON/OFF
+5VST
+5V
FRONT / KEY BOARD RIGHT
Componentside view
1430
KEY 2
KEY 1
KEY_GND
JOG_B
JOG_A
LED_CON_7
LED_CON_6
LED_CON_5
LED_CON_4
LED_CON_3
D_GND
+5V
LEGEND
FFC TOP ENTRY
FFC SIDE ENTRY
EH TOP ENTRY
EH SIDE ENTRY
DIPMATE
SPARE
PH TOP ENTRY
PH SIDE ENTRY
CABLE 1 to N

wiring CDR78-5, 000113

For service code numbers of flexfoil cables see mechanical partslist.

for orientation only

Switched Mode Power Supply / EU + USA version (/00/17)


R152
10
22 USA
R158 470k USA
820K
R151 820K 470K USA
300V
0,1V
Q151
R153 47K
22V D151
C153 1000p/50
R154 1K
Q152 0,1V
C152 2200p/50
-0,1V
∗R155
PC151
R156 100
8,5V
D153
T102
D251 5V
D252 6.8V
C251 470/10
R251 47
4,9V
R256 1K
PC151
3,9V
C254 1/50
IC251
2,4V
R252 5.6K
R253 5.6K
∗R254
L251 4.7µH
C253 220/10
PC102
R255 1K
1,2V
0V
Q251
4,4V
C111 2200pF USA 1500pF
T101
300V
D101 D102 D103 D104
L102
R101 1M 1/2
C101 0.1/275AC
L101
C102 0.1/275AC
Z101
F101 T2AL250V 2A 125V USA
CN101 AC INLET
L N
C105 47/400 150/200 USA
R102 220K 1/2 100k USA
R103 220K 1/2 100k USA
R104 15K
6V
D111 USA
D112 USA 150V
C107 4.7/50
-0,3V
Q101 300V
L104
C108 470pF/1K 1000p/1k USA
R114 47K
Q104
0,1V
R115 47K
PC102
R106 15K
D110
-0,3V
Q103
C110 0.047/50
-0,1V
L103
C109 0.1/50
D107
R108 180/2 120/2 USA
∗R111
D108 3V
PC101 4,8V
R112 22
D109
D201
C202 1000/16
D202
C201 2200/10
R201 47
5V
R202 1K
PC101
3,9V
C203 1/50
IC201
2,4V
R205 5.6K
R203 5.6K
∗R204
L201 20µH
L202 3µH
D206 15V
C210 220/16
D203
C204 220/16
R207 1.0
C211 100/16
D204
C205 100/50
-31,5V
Q202 -29,5V
R212 10K
R211 1K
-30,2V
R209 2.2
L203 (W)
C206 470/10
C208 470/10
C212 10/50
D207 30V
D205
C207 0.047/50
to Interface Board 1305 CON1
4,4/0V
ON/OFF
5±0,25V
+5V EVER
typ.-25V
-F
4,1±0,4V floating
typ.-21V
+F
-29,3±2,2V
-30V
5±0,25V
12+0,6/-1,2V
-8,4±0,8V
1 2 3 4 5 6 7 8 9 10 11
to CDR module 1501 CON2
+5V
+5V
GND
GND
GND
+12V
-8V
7 6 5 4 3 2 1
V EVM

...V DC VOLTAGES MEASURED IN *STOP MODE* UNLESS STATED OTHERWISE

MAINS VOLTAGE 230V

D101.D102.D103.D104	1N4005 or 1N4007
D107	11ES2 or ERA15-02
D108	MA4030 or MTZJ3.0
D109, D110, D153	1SS133 or MA165
D111	AG01A USA
D112	P6KE150 or Z2150U USA
D151	MA4220 or MTZJ22
Q101	2SC4231 2SC5241 USA
Q103, Q104	2SC4040
Q151	2SK2128 2SK2177 USA
Q152	2SC1740
PC101, PC102, PC151	ON3171 or PC123 or PS2561 ON3131 or PC817 or PS2501 USA

D201	S3L20U or 31DF2
D202	D3S4M or SB340
D203, D204, D251	D1NL20U
D205	AK04
D206	RD15F or MA2150
D207	MA4300 or MTZJ30
D252	MA4068 or MTZJ6.8
IC201, IC251	AN1431T or MM1431AT
Q202	2SB1434 or 2SA1015 or 2SA933AS
Q251	UN4211 or DTC114ESA

LEGEND

.... USA for USA version only

Ω/W (1/4W)
µF/V (50V)

∗ EU version

symbol	min	typ	max
∗R111	680	820	1K
∗R155	10K	15K	82K
∗R204	47K	100K	OPEN
∗R254	47K	100K	OPEN

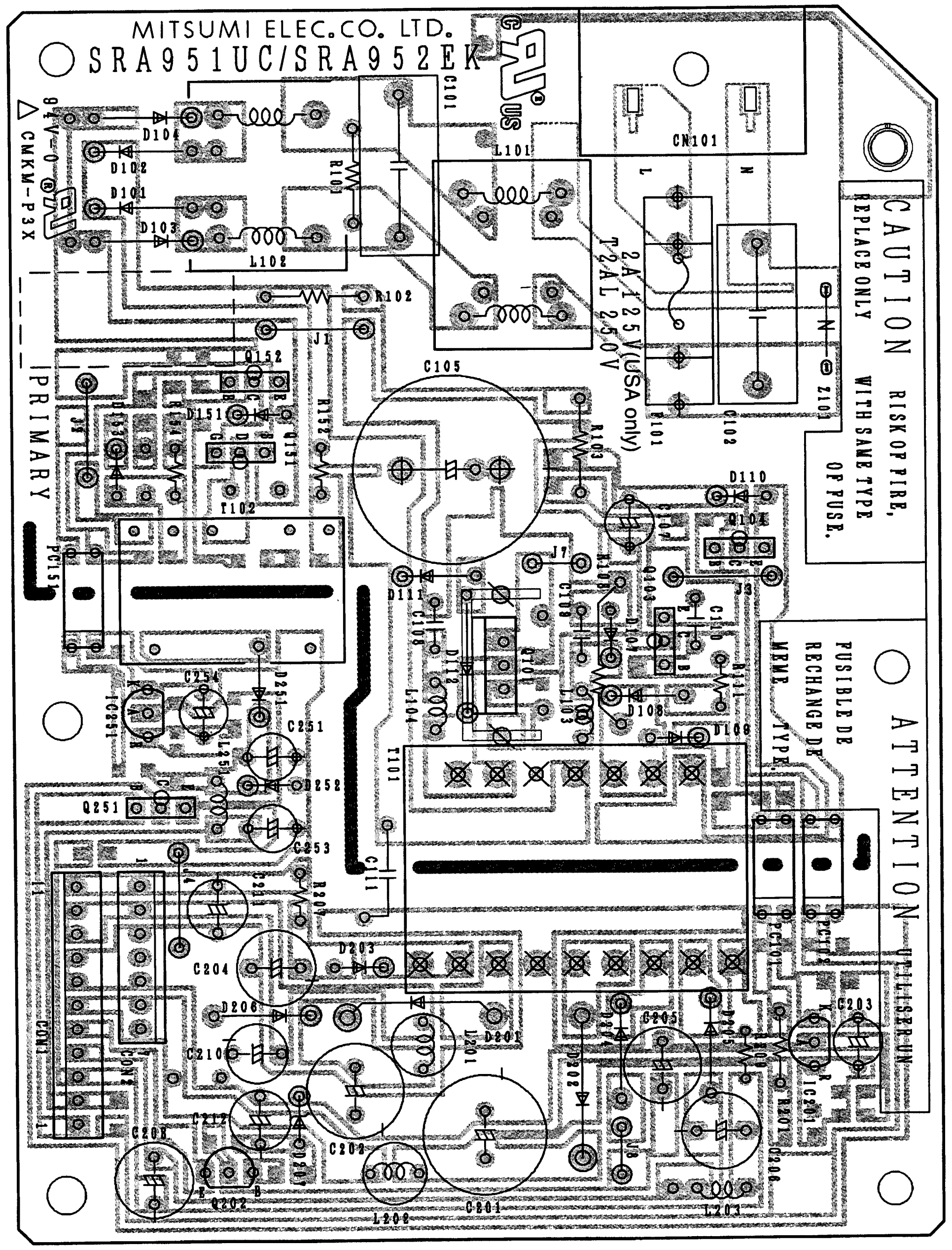
∗ USA version

symbol	min	typ	max
∗R111	470	560	680
∗R155	10k	22k	82k
∗R204	47k	100k	OPEN
∗R254	47k	100k	OPEN

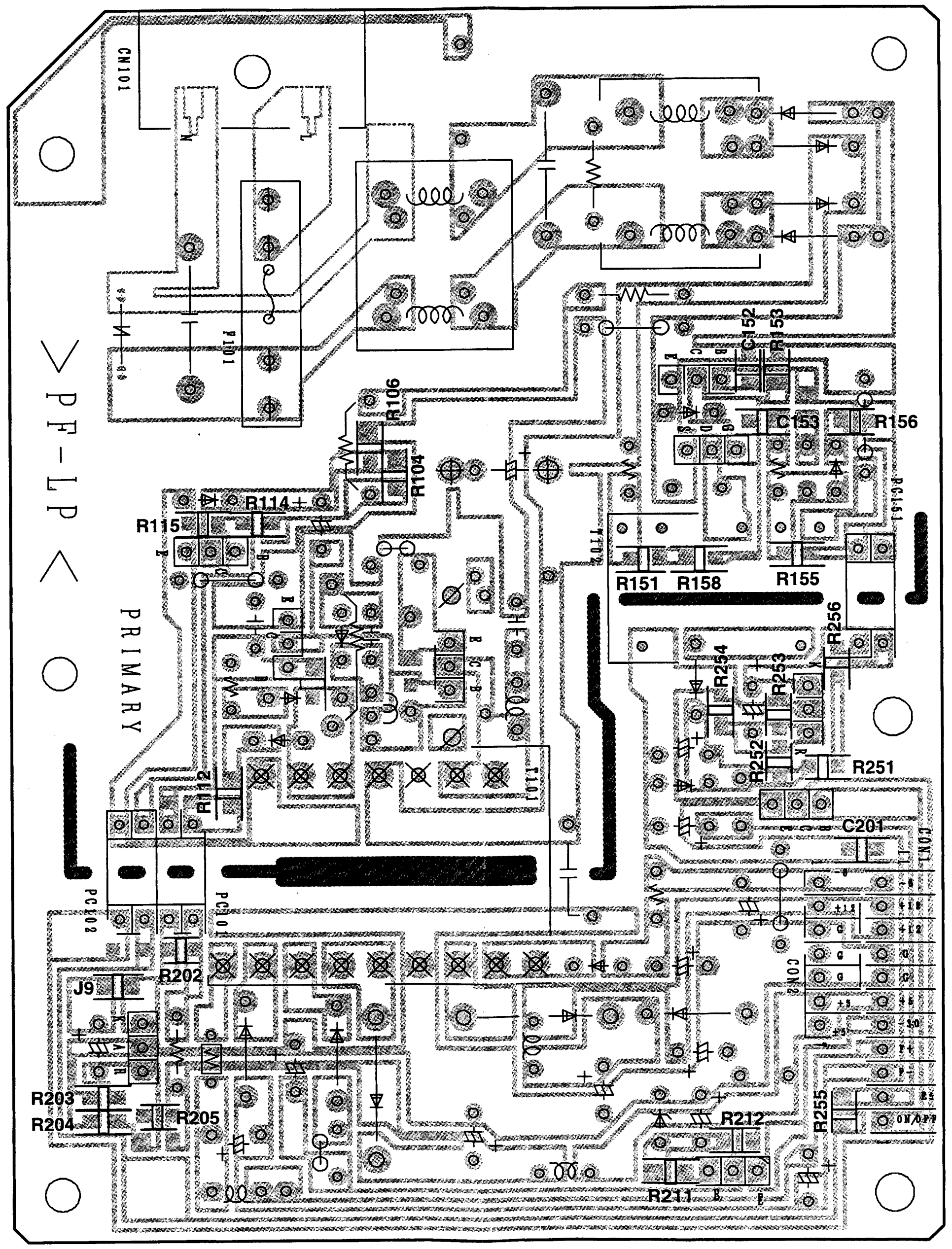
Switched Mode Power Supply, EU+USA versions, 000330
(SRA952EK+SRA951UC combined)

for orientation only

POWER BOARD / component side view
USA and European version

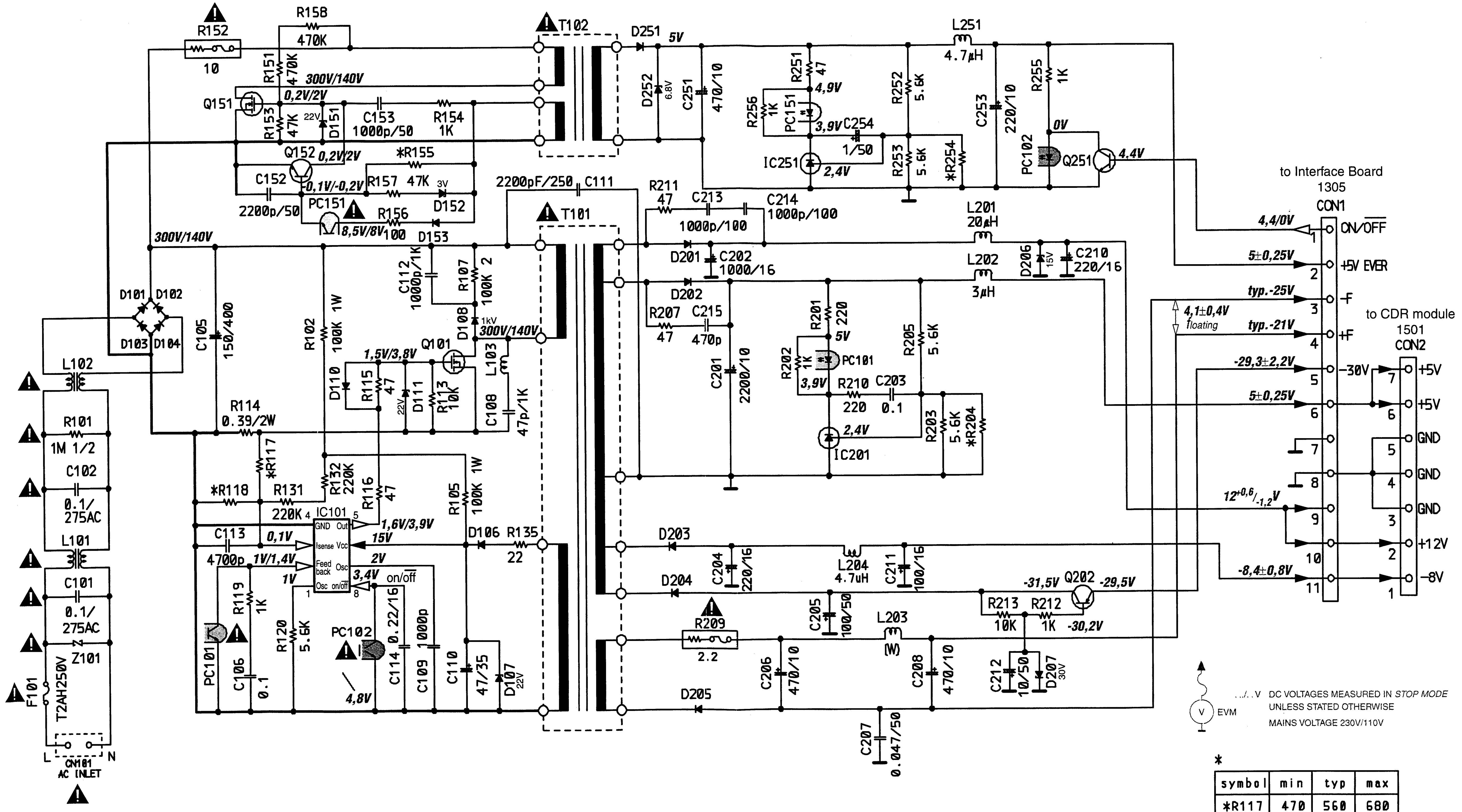

MITSUMI ELEC.CO. LTD.
SRA951UC/SRA952EK
CAUTION
RISK OF FIRE, REPLACE ONLY WITH SAME TYPE OF FUSE.
2A/125V (USA only)
T2AL 250V
ATTENTION
PRIMARY
CN101
L101
L102
D101
D102
D103
D104
R101
R102
C101
C105
D110
D111
Q101
Q151
Q152
T101
T102
C201
C202
C203
C204
C251
C252
C253
Q251
Q202
D201
D203
D206
L201
L202
L203
CN201

POWER BOARD / copper side view
USA and European version


CN101
>PF-LP<
PRIMARY
R104
R106
R112
R114
R115
R151
R155
R156
R158
R251
R252
R253
R254
R256
C152
C153
R153
C201
J9
R202
R203
R204
R205
R211
R212
R255

for orientation only

Switched Mode Power Supply / WorldWide version (/01)


R152
10
R158
470K
R151
470K
300V/140V
0,2V/2V
Q151
R153
47K
22V
D151
C153
1000p/50
R154
1K
Q152
0,2V/2V
*R155
C152
2200p/50
0,1V/-0,2V
R157 47K
3V
D152
PC151
R156
100
8,5V/8V
D153
300V/140V
T102
D251
5V
D252
6.8V
C251
470/10
R251
47
4,9V
R256
1K
PC151
3,9V
C254
1/50
IC251
2,4V
R252
5.6K
R253
5.6K
*R254
L251
4.7µH
C253
220/10
R255
1K
0V
PC102
Q251
4,4V
2200pF/250
C111
R211
47
C213
1000p/100
C214
1000p/100
T101
D201
C202
1000/16
D202
R207
47
C215
470p
C201
2200/10
R201
220
5V
R202
1K
PC101
3,9V
R210
220
C203
0.1
2,4V
IC201
R205
5.6K
R203
5.6K
*R204
L201
20µH
L202
3µH
D206
15V
C210
220/16
D101
D102
D103
D104
C105
150/400
R102
100K 1W
C112
1000p/1K
R107
100K 2
D108
1kV
300V/140V
Q101
L103
C108
47p/1K
1,5V/3,8V
D110
R115
47
22V
D111
R113
10K
R114
0.39/2W
*R117
*R118
R131
220K
R132
220K
R116
47
IC101
GND
Out
Isense
Vcc
Feed back
Osc
Osc on/off
1,6V/3,9V
15V
2V
3,4V
on/off
0,1V
1V/1,4V
1V
C113
4700p
R119
1K
R120
5.6K
PC101
C106
0.1
PC102
4,8V
C114
0.22/16
C109
1000p
C110
47/35
D107
22V
R105
100K 1W
D106
R135
22
D203
C204
220/16
L204
4.7uH
C211
100/16
D204
C205
100/50
R209
2.2
L203
(W)
C206
470/10
C208
470/10
D205
C207
0.047/50
-31,5V
Q202
-29,5V
R213
10K
R212
1K
-30,2V
C212
10/50
D207
30V
L102
R101
1M 1/2
C102
0.1/
275AC
L101
C101
0.1/
275AC
Z101
F101
T2AH250V
L
N
CN101
AC INLET
to Interface Board
1305
CON1
4,4/0V
ON/OFF
5±0,25V
+5V EVER
typ.-25V
-F
4,1±0,4V
floating
typ.-21V
+F
-29,3±2,2V
-30V
5±0,25V
12+0,6/-1,2V
-8,4±0,8V
to CDR module
1501
CON2
+5V
+5V
GND
GND
GND
+12V
-8V
EVM

. . ./. . V DC VOLTAGES MEASURED IN *STOP MODE* UNLESS STATED OTHERWISE

MAINS VOLTAGE 230V/110V

D101.D102.D103.D104	1N4005 or 1N4007
D106	AU02Z or
D107, D151	MA4220 or MTZJ22
D108	EG01C or
D110, D153	1SS133 or MA165
D111	MA2220 or RD22F
D152	MA4030 or MTZJ3.0
Q101	2SK2651
Q151	2SK2128
Q152	2SC1740
PC101, PC102, PC151	ON3171 or PC123 or PS2561
IC101	KA7552 or FA5317P
D201	S3L20U or 31DF2
D202	D3S4M or SB340
D203, D204, D251	D1NL20U
D205	AK04
D206	RD15F or MA2150
D207	MA4300 or MTZJ30
D252	MA4068 or MTZJ6.8
IC201, IC251	AN1431T or MM1431AT
Q202	2SB1434 or 2SA1015 or 2SA933AS
Q251	UN4211 or DTC114ESA

Ω/W (1/4W)	
µF/V (50V)	

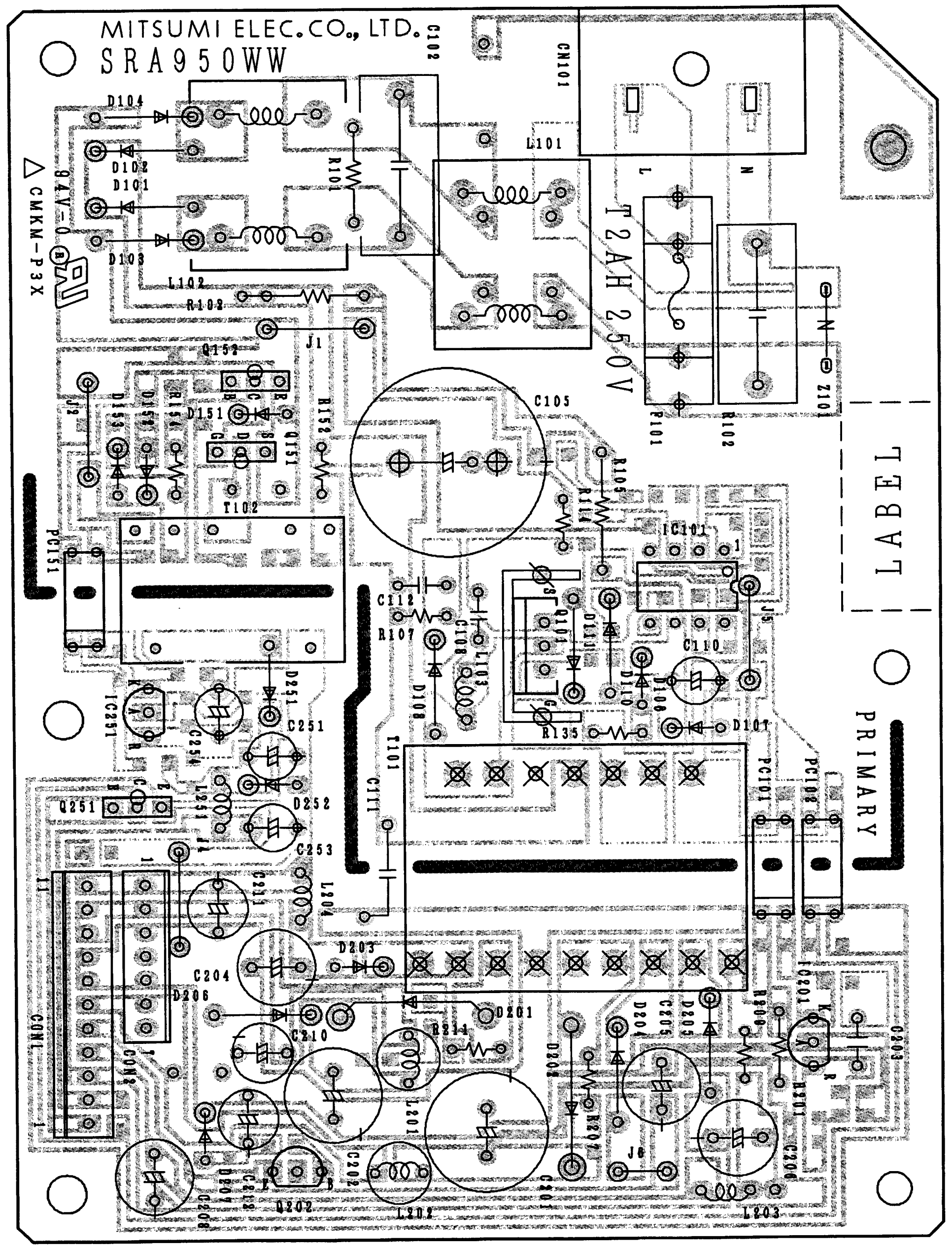
*

symbol	min	typ	max
*R117	470	560	680
*R118	560	680	820
*R155	15K	33K	82K
*R204	47K	100K	OPEN
*R254	47K	100K	OPEN

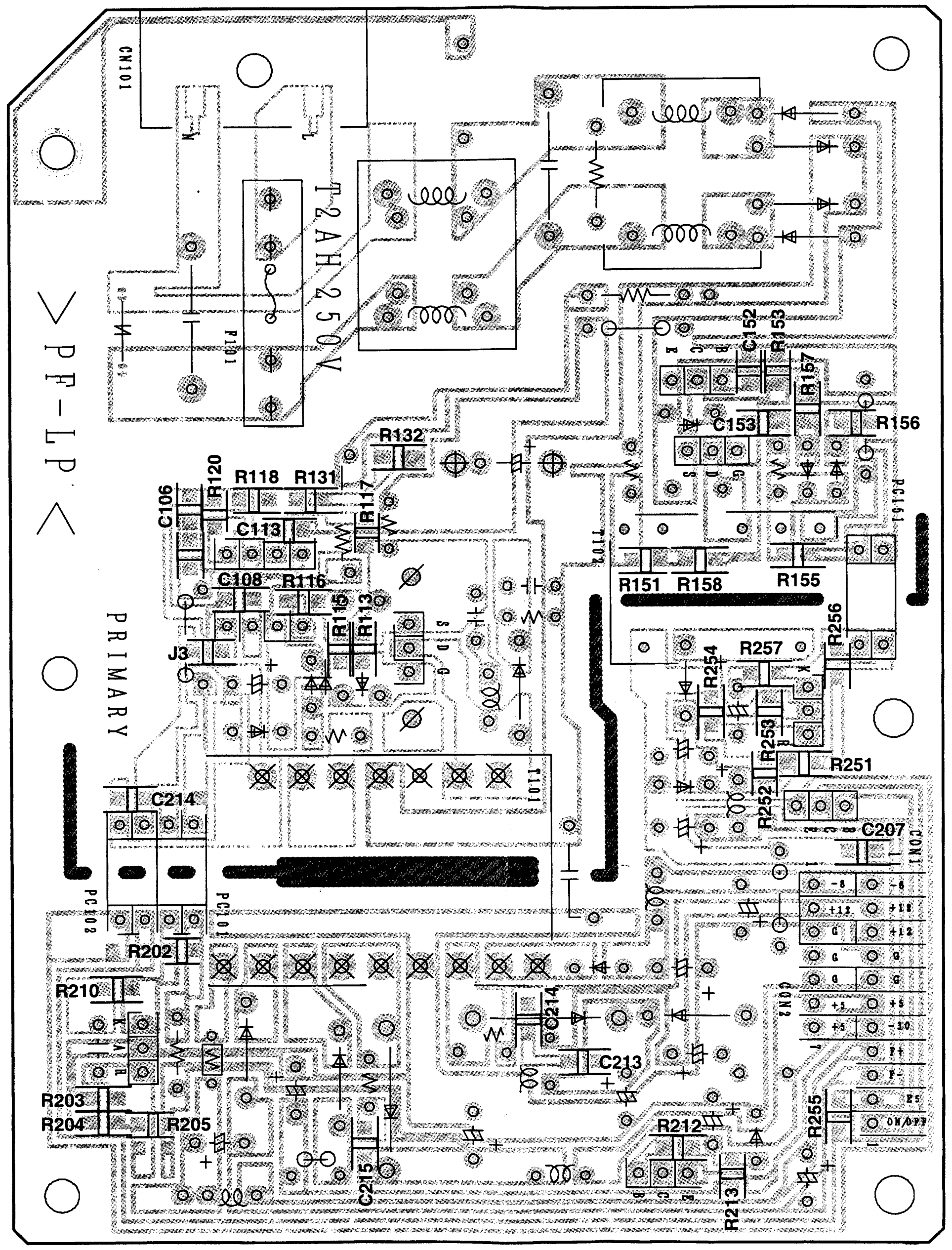
Switched Mode Power Supply, World Wide version, 000330
(SRA950WW)

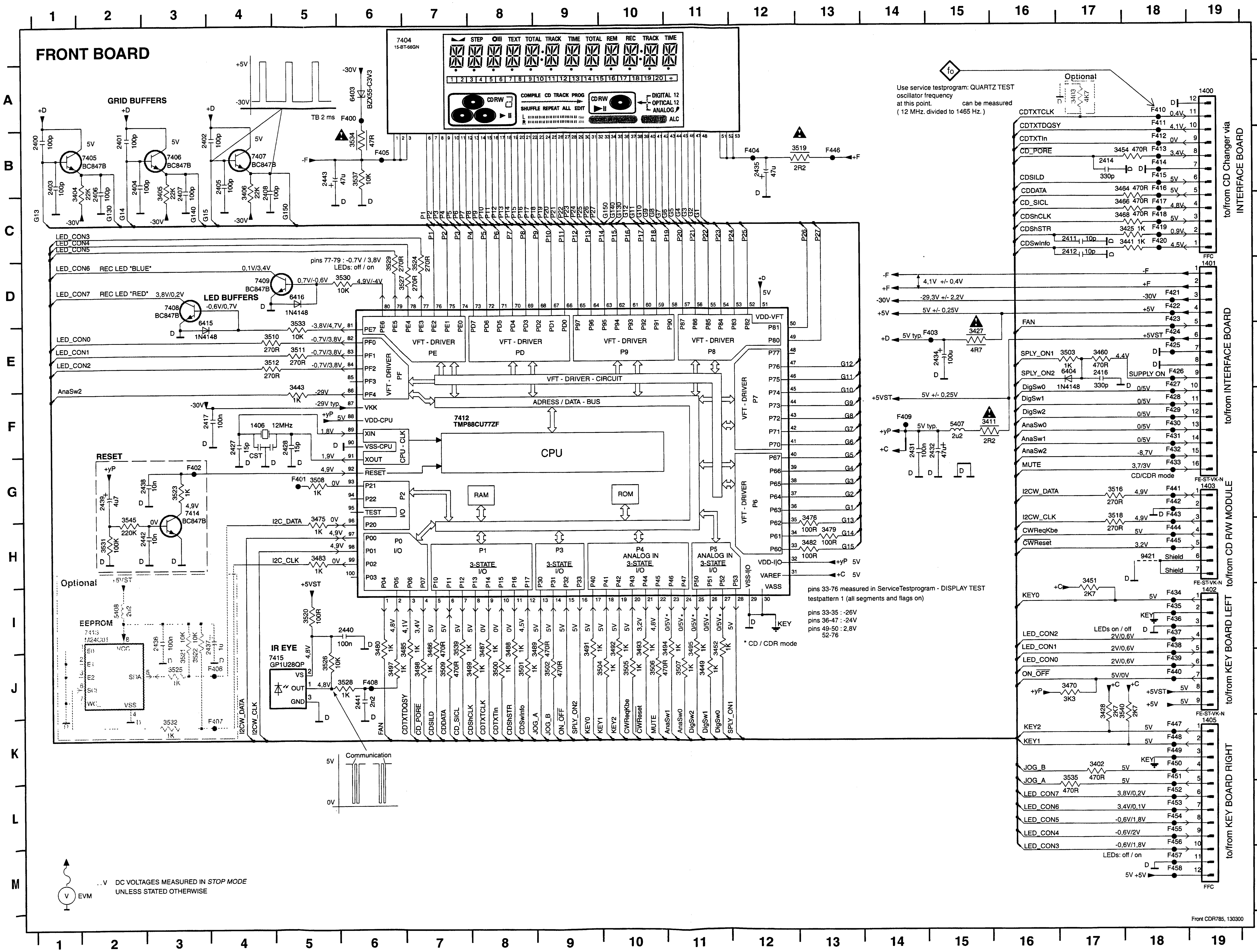
for orientation only

POWER BOARD / component side view
WorldWide version


MITSUMI ELEC.CO., LTD.
SRA950WW
CMKM-P3X
D104
D102
D101
D103
L102
R102
L101
R101
C101
C102
CN101
T2AH 250V
P101
P102
L
N
LABEL
J1
Q152
D151
Q151
T102
C105
R105
R106
IC101
PC151
C112
R107
C110
D107
R135
T101
C111
PC101
PC102
PRIMARY
IC251
C251
D251
D252
C253
Q251
CON1
C204
D203
D206
C210
D201
R214
L201
C203
C202
D202
J6
L203
D205

POWER BOARD / copper side view
WorldWide version


CN101
T2AH 250V
P101
PF-LP
PRIMARY
R132
R120
R118
R131
C106
C113
R117
C108
R116
R115
R113
J3
C152
R153
R157
C153
R156
PC151
R151
R158
R155
R257
R256
R254
R253
R251
R252
C207
CN1
T101
C214
PC102
PC101
R202
R210
C214
C213
R203
R204
R205
C215
R212
R213
R255
CN2
ON/OFF


FRONT BOARD
GRID BUFFERS
LED BUFFERS
RESET
EEPROM
IR EYE
7404 15-BT-66GN
7412 TMP88CU77ZF
CPU
RAM
ROM
VFT - DRIVER - CIRCUIT
ADRESS / DATA - BUS
7405 BC847B
7406 BC847B
7407 BC847B
7408 BC847B
7409 BC847B
7414 BC847B
7413 M24C01
7415 GP1U28QP
6403 BZX55-C3V3
6415 1N4148
6416 1N4148
1406 12MHz
TB 2 ms
Communication
Optional
to/from CD Changer via INTERFACE BOARD
to/from INTERFACE BOARD
to/from CD R/W MODULE
to/from KEY BOARD LEFT
to/from KEY BOARD RIGHT
1400
1401
1402
1403
1405
CD/CDR mode
LEDs: off / on
LEDs on / off
EVM

Use service testprogram: QUARTZ TEST oscillator frequency at this point. can be measured (12 MHz. divided to 1465 Hz.)

pins 77-79 : -0.7V / 3,8V LEDs: off / on

pins 33-76 measured in ServiceTestprogram - DISPLAY TEST testpattern 1 (all segments and flags on)

pins 33-35 : -26V
pins 36-47 : -24V
pins 49-50 : 2,8V
52-76

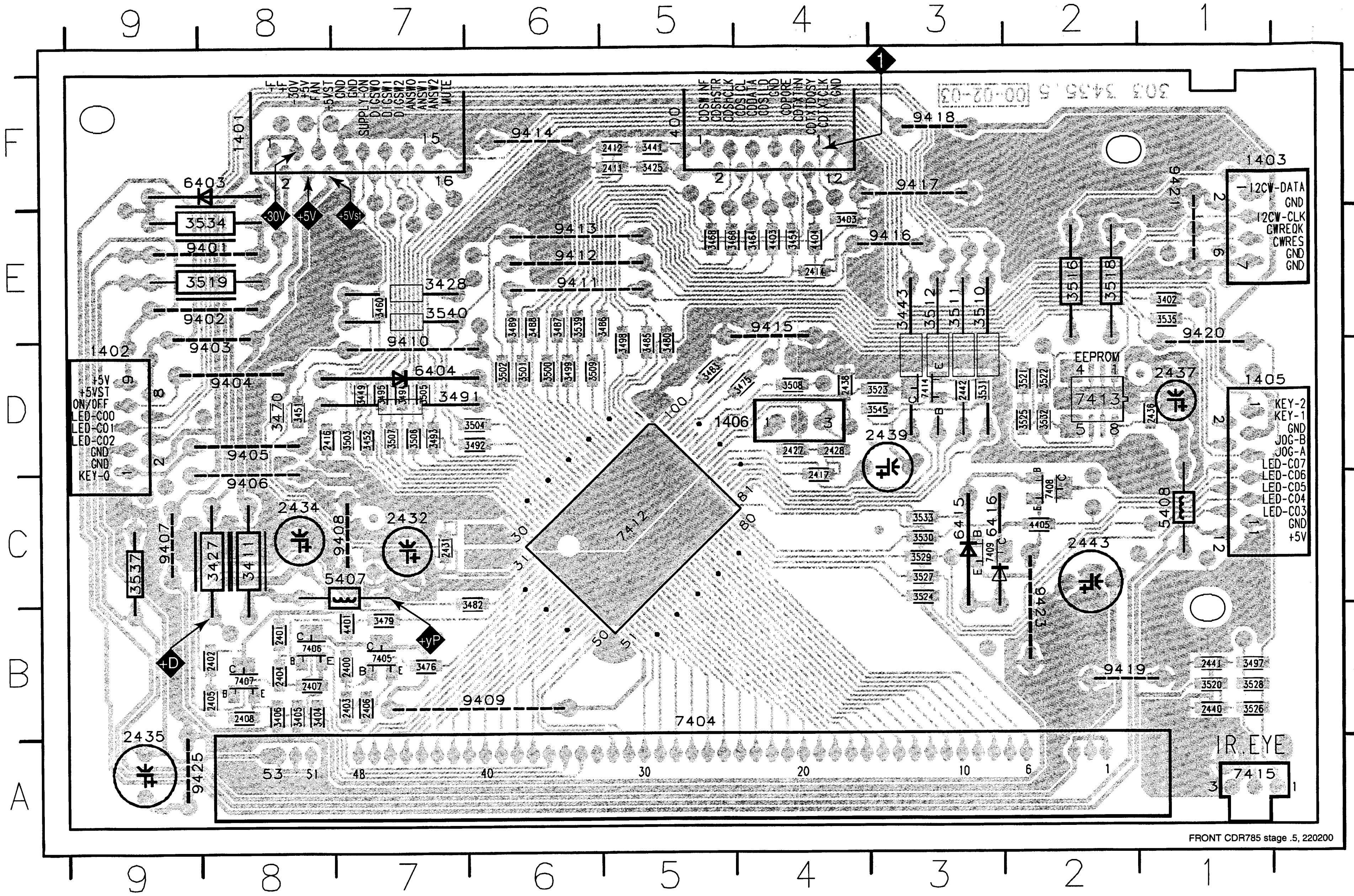
* CD / CDR mode

..V DC VOLTAGES MEASURED IN *STOP MODE* UNLESS STATED OTHERWISE

Front CDR785, 130300

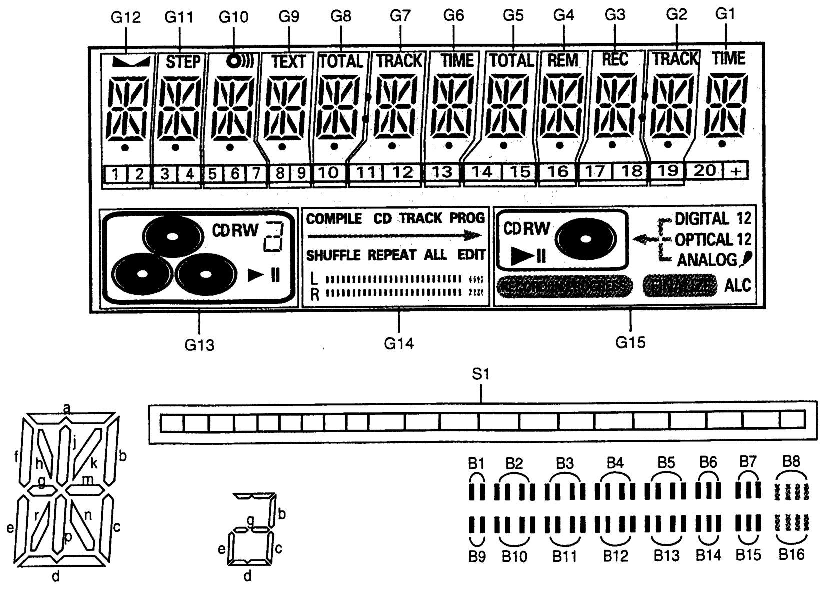
1400	A19
1401	D19
1402	I19
1403	G19
1405	K19
1406	F4
2400	B1
2401	B2
2402	B3
2403	B1
2404	B2
2405	B4
2406	B2
2407	B3
2408	B4
2411	C17
2412	C17
2414	B17
2416	E17
2417	F3
2427	F4
2428	F5
2431	F14
2432	F15
2434	E15
2435	B12
2436	I3
2437	I4
2438	G3
2439	G2
2440	I6
2441	J6
2442	H3
2443	B5
3402	K17
3403	A17
3404	B1
3405	B3
3406	B4
3411	F15
3425	C18
3427	E15
3428	J17
3441	C18
3443	E5
3449	J11
3451	H17
3452	I11
3454	B17
3460	E17
3464	B18
3466	C18
3468	C18
3470	J17
3475	G5
3476	H13
3479	H13
3480	I6
3482	H13
3483	H5
3485	I6
3486	I7
3487	I8
3488	I8
3489	I8
3491	I9
3492	I10
3493	I10
3494	I10
3495	I11
3497	J6
3498	J7
3499	J7
3500	J8
3501	J8
3502	J9
3503	E17
3504	J9
3505	J10
3506	J10
3507	J11
3508	G5
3509	J7
3510	E4
3511	E5
3512	E4
3516	G17
3518	G17
3519	B13
3520	I5
3521	J3
3522	J3
3523	G3
3524	D7
3525	J3
3526	J5
3527	D7
3528	J6
3529	D6
3530	D6
3531	H2
3532	K3
3533	D5
3534	B6
3535	K17
3537	B6
3539	I7
3540	J17
3545	G2
5407	F15
5408	I2
6403	A6
6404	E17
6415	D3
6416	D5
7404	A6
7405	B2
7406	B3
7407	B4
7408	D3
7409	D4
7412	D5
7413	I2
7414	G3
7415	J5
9421	H18
F400	A6
F401	G5
F402	G3
F403	E15
F404	B12
F405	B6
F406	J4
F407	K4
F408	J6
F409	F14
F410	A18
F411	A18
F412	B18
F413	B18
F414	B18
F415	B18
F416	B18
F417	C18
F418	C18
F419	C18
F420	C18
F421	D18
F422	D18
F423	D18
F424	E18
F425	E18
F426	E18
F427	E18
F428	F18
F429	F18
F430	F18
F431	F18
F432	F18
F433	G18
F434	I18
F435	I18
F436	I18
F437	I18
F438	I18
F439	J18
F440	J18
F441	G18
F442	G18
F443	G18
F444	H18
F445	H18
F446	B13
F447	K18
F448	K18
F449	K18
F450	K18
F451	K18
F452	L18
F453	L18
F454	L18
F455	L18
F456	L18
F457	M18
F458	M18

FRONT BOARD
copperside view

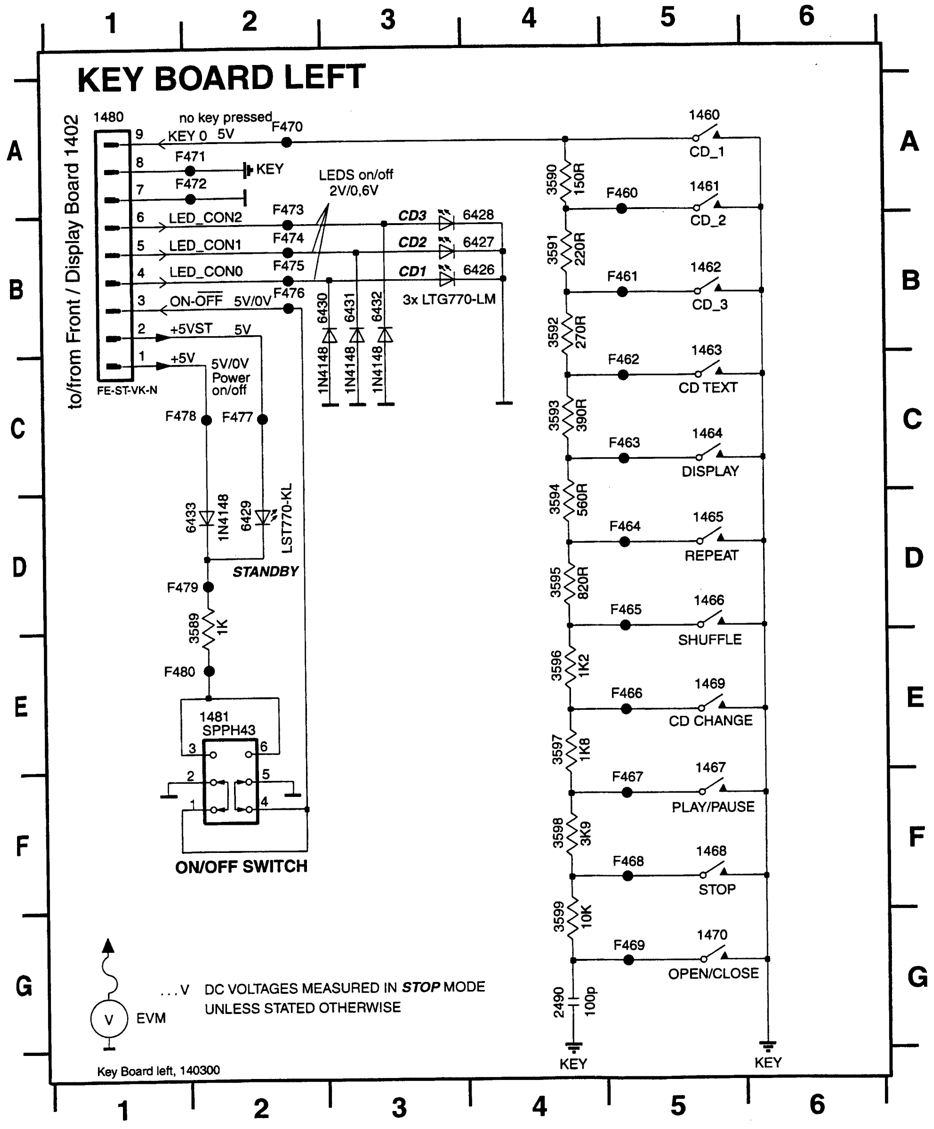

9 8 7 6 5 4 3 2 1
F E D C B A
FRONT CDR785 stage .5, 220200
303 3455 5 00-02-03
1401
-1F
+1F
-30V
+5V
FAN
+5VST
GND
GND
SUPPLY-ON
DIGSW0
DIGSW1
DIGSW2
ANSW0
ANSW1
ANSW2
MUTE
1 2 15 16
-30V
+5V
+5Vst
1400
CDSWINF
CDShSTR
CDShCLK
CDSLCL
CDDATA
CDSLGND
CDPORE
CDTXTHN
CDTXDSY
CDTXTCLK
GND
1 2 11 12
1
1402
+5V
+5VST
ON/OFF
LED-C00
LED-C01
LED-C02
GND
GND
KEY-0
1403
I2CW-DATA
GND
I2CW-CLK
CWREOK
CWRES
GND
GND
1405
KEY-2
KEY-1
GND
JOG-B
JOG-A
LED-C07
LED-C06
LED-C05
LED-C04
LED-C03
GND
+5V
EEPROM
7413
7412
7404
7415
IR EYE
1406
6403
6404
6415
6416
3534
3519
3428
3540
3491
3427
3411
3537
3443
3512
3511
3510
3516
3518
5407
5408
2434
2432
2435
2437
2439
2443
9401
9402
9403
9404
9405
9406
9407
9408
9409
9410
9411
9412
9413
9414
9415
9416
9417
9418
9419
9420
9421
9423
9425
+D
+VP
53 51 48 40 30 20 10 6 1

2400	B7
2401	B8
2402	B8
2403	B7
2404	B8
2405	B8
2406	B7
2407	B8
2408	B8
2411	F5
2412	F5
2414	E4
2416	D8
2417	C4
2427	D4
2428	D4
2431	C7
2436	D1
2438	D4
2440	B1
2441	B1
2442	D3
3402	E1
3403	E4
3404	B8
3405	B8
3406	B8
3425	F5
3441	F5
3449	D7
3451	D8
3452	D7
3454	E4
3460	E7
3464	E4
3466	E5
3468	E5
3470	D8
3475	D4
3476	B7
3479	B7
3480	D5
3482	C6
3483	D5
3485	D5
3486	E5
3487	E6
3488	E6
3489	E6
3492	D6
3493	D7
3494	D7
3495	D7
3497	B1
3498	D5
3499	D6
3500	D6
3501	D6
3502	D6
3503	D7
3504	D6
3505	D7
3506	D7
3507	D7
3508	D4
3509	D6
3520	B1
3521	D2
3522	D2
3523	D3
3524	C3
3525	D2
3526	B1
3527	C3
3528	B1
3529	C3
3530	C3
3531	D3
3532	D2
3533	C3
3535	E1
3539	E6
3545	D3
4401	B7
4403	E4
4404	E4
4405	C2
7405	B7
7406	B8
7407	B8
7408	C2
7409	C3
7412	C5
7413	D2
7414	D3
1400	F5
1401	F8
1402	D9
1403	F1
1405	D1
1406	D4
2432	C7
2434	C8
2435	A9
2437	D1
2439	C3
2443	C2
3411	C8
3427	C9
3428	E7
3443	D3
3491	D7
3510	D3
3511	D3
3512	D3
3516	E2
3518	E2
3519	E8
3534	E8
3537	C9
3540	E7
5407	B7
5408	C1
6403	F8
6404	D6
6415	C3
6416	C2
7404	B5
7415	A1
9401	E8
9402	E8
9403	D8
9404	D8
9405	D8
9406	C8
9407	C9
9408	C7
9409	B6
9410	D7
9411	E6
9412	E6
9413	E6
9414	F6
9415	D4
9416	E3
9417	F3
9418	F3
9419	B2
9420	D1
9421	E1
9423	B2
9425	A9

DISPLAY CONNECTION

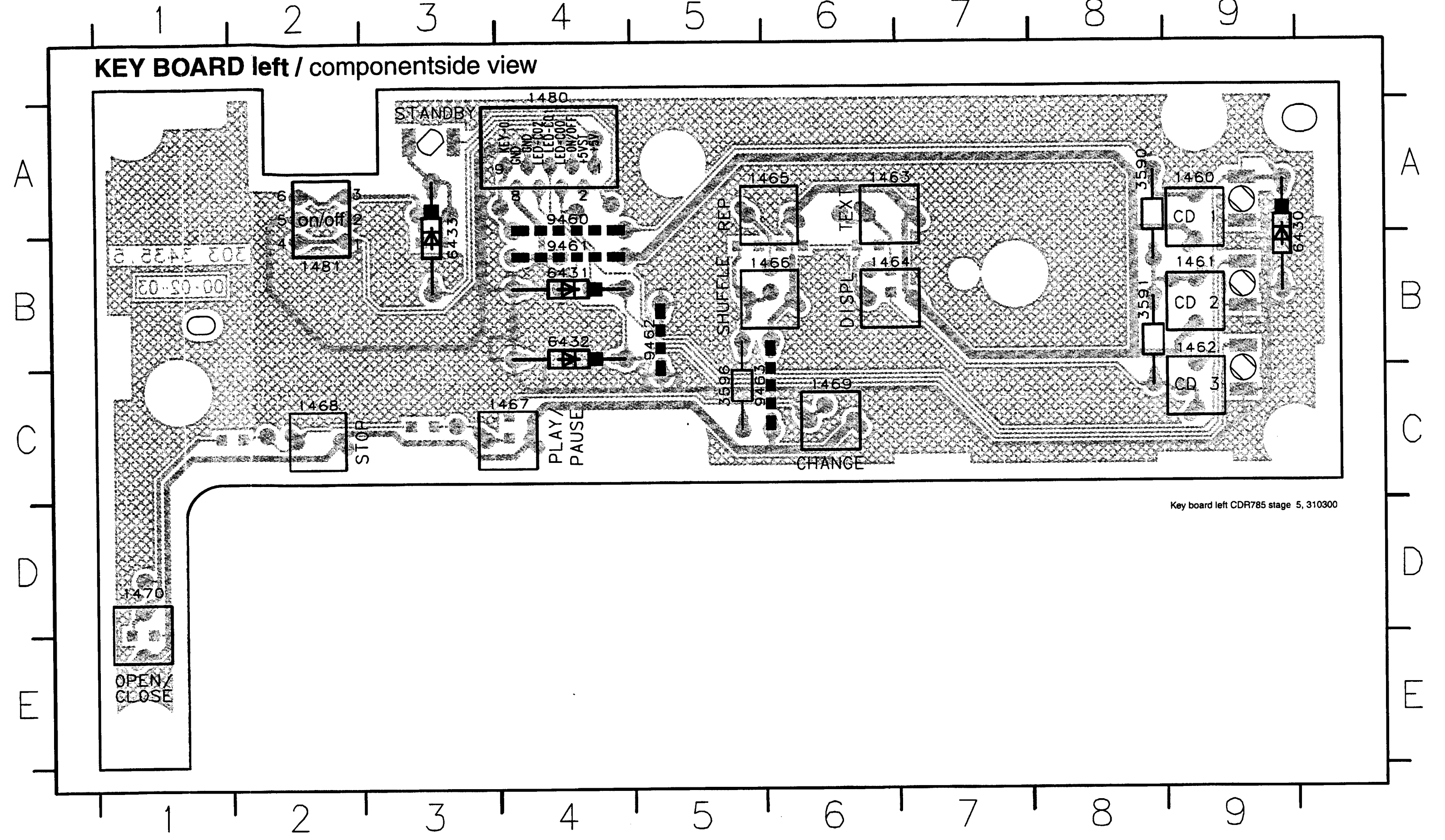

G12 G11 G10 G9 G8 G7 G6 G5 G4 G3 G2 G1
STEP
TEXT
TOTAL
TRACK
TIME
TOTAL
REM
REC
TRACK
TIME
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 +
CDRW
COMPILE CD TRACK PROG
SHUFFLE REPEAT ALL EDIT
L
R
CDRW
DIGITAL 12
OPTICAL 12
ANALOG
ALC
G13
G14
G15
S1
a b c d e f g h j k m n p r
b c d e g
B1 B2 B3 B4 B5 B6 B7 B8
B9 B10 B11 B12 B13 B14 B15 B16

Pin		34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
		G15	G14	G13	G12	G11	G10	G9	G8	G7	G6	G5	G4	G3	G2	G1
6	P1	▭	B1	▭	a	a	a	a	a	a	a	a	a	a	a	a
7	P2	▶	B2	▶	j	j	j	j	j	j	j	j	j	j	j	j
8	P3	**II**	B3	**II**	h	h	h	h	h	h	h	h	h	h	h	h
9	P4	**2** (optical)	B4	◯ (right)	k	k	k	k	k	k	k	k	k	k	k	k
10	P5	**1** (optical)	B5	● (right)	b	b	b	b	b	b	b	b	b	b	b	b
11	P6	–	B6	◯ (left)	f	f	f	f	f	f	f	f	f	f	f	f
12	P7	◄--	B7	● (left)	m	m	m	m	m	m	m	m	m	m	m	m
13	P8	◯	B8	◯ (top)	g	g	g	g	g	g	g	g	g	g	g	g
14	P9	●	**EDIT**	● (top)	c	c	c	c	c	c	c	c	c	c	c	c
15	P10	**OPTICAL**	**ALL**	**CD**	e	e	e	e	e	e	e	e	e	e	e	e
16	P11	**2** (digital)	**REPEAT**	**R**	r	r	r	r	r	r	r	r	r	r	r	r
17	P12	**1** (digital)	**SHUFFLE**	**W**	n	n	n	n	n	n	n	n	n	n	n	n
18	P13	-	-	-	p	p	p	p	p	p	p	p	p	p	p	p
19	P14	**DIGITAL**	--------►	e	d	d	d	d	d	d	d	d	d	d	d	d
20	P15	┌	**PROG**	c	■	■	■	■	■	■	■	■	■	■	■	■
21	P16	**CD**	**TRACK**	b	**1**	**3**	**5**	**8**	**10**	**11**	**13**	**14**	**16**	**17**	**19**	**20**
22	P17	**R**	**CD**	g, a, d	**2**	**4**	**6**	**9**	-	**12**	-	**15**	-	**18**	-	**+**
23	P18	**W**	**COMPILE**	5h	-	-	7	-	-	-	-	-	-	-	-	-
24	P19	└	B16	-	◣◢	**STEP**	🔊	**TEXT**	**TOTAL**	**TRACK**	**TIME**	**TOTAL**	**REM**	**REC**	**TRACK**	**TIME**
25	P20	**ANALOG**	B15	-	-	-	-	-	-	-	-	-	-	:		-
26	P21	✎	B14	-	-	-	-	-	:		-	-	-	-	-	
27	P22	**ALC**	B13	-	S1											
28	P23	▬	B12	-	-	-	-	-	-	-	-	-	-	-	-	-
29	P24	▬	B11	-	-	-	-	-	-	-	-	-	-	-	-	-
30	P25	-	B10	-	-	-	-	-	-	-	-	-	-	-	-	-
31	P26	-	B9	-	-	-	-	-	-	-	-	-	-	-	-	-
32	P27	-	L R	-	-	-	-	-	-	-	-	-	-	-	-	-

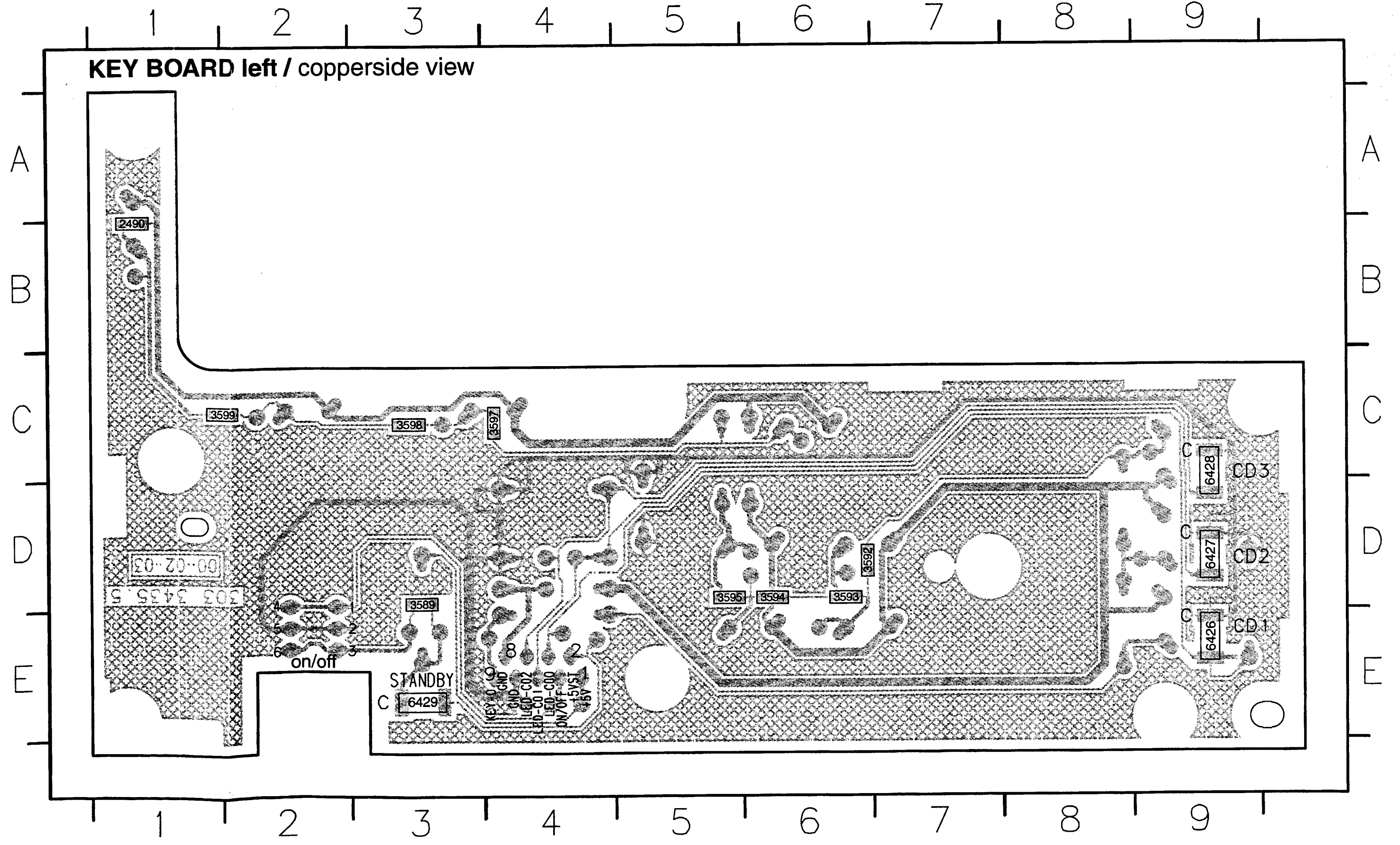

KEY BOARD LEFT
1480
to/from Front / Display Board 1402
FE-ST-VK-N
no key pressed
KEY 0 5V
F470
F471
KEY
F472
LEDS on/off
2V/0,6V
F473
LED_CON2
F474
LED_CON1
F475
LED_CON0
F476
ON-OFF 5V/0V
+5VST 5V
+5V
5V/0V
Power
on/off
CD3
CD2
CD1
6428
6427
6426
3x LTG770-LM
6430
6431
6432
1N4148
F478
F477
6433
1N4148
6429
LST770-KL
STANDBY
F479
3589
1K
F480
1481
SPPH43
ON/OFF SWITCH
3590 150R
3591 220R
3592 270R
3593 390R
3594 560R
3595 820R
3596 1K2
3597 1K8
3598 3K9
3599 10K
2490 100p
F460
F461
F462
F463
F464
F465
F466
F467
F468
F469
1460 CD_1
1461 CD_2
1462 CD_3
1463 CD TEXT
1464 DISPLAY
1465 REPEAT
1466 SHUFFLE
1469 CD CHANGE
1467 PLAY/PAUSE
1468 STOP
1470 OPEN/CLOSE
KEY
KEY
EVM
...V DC VOLTAGES MEASURED IN STOP MODE
UNLESS STATED OTHERWISE
Key Board left, 140300

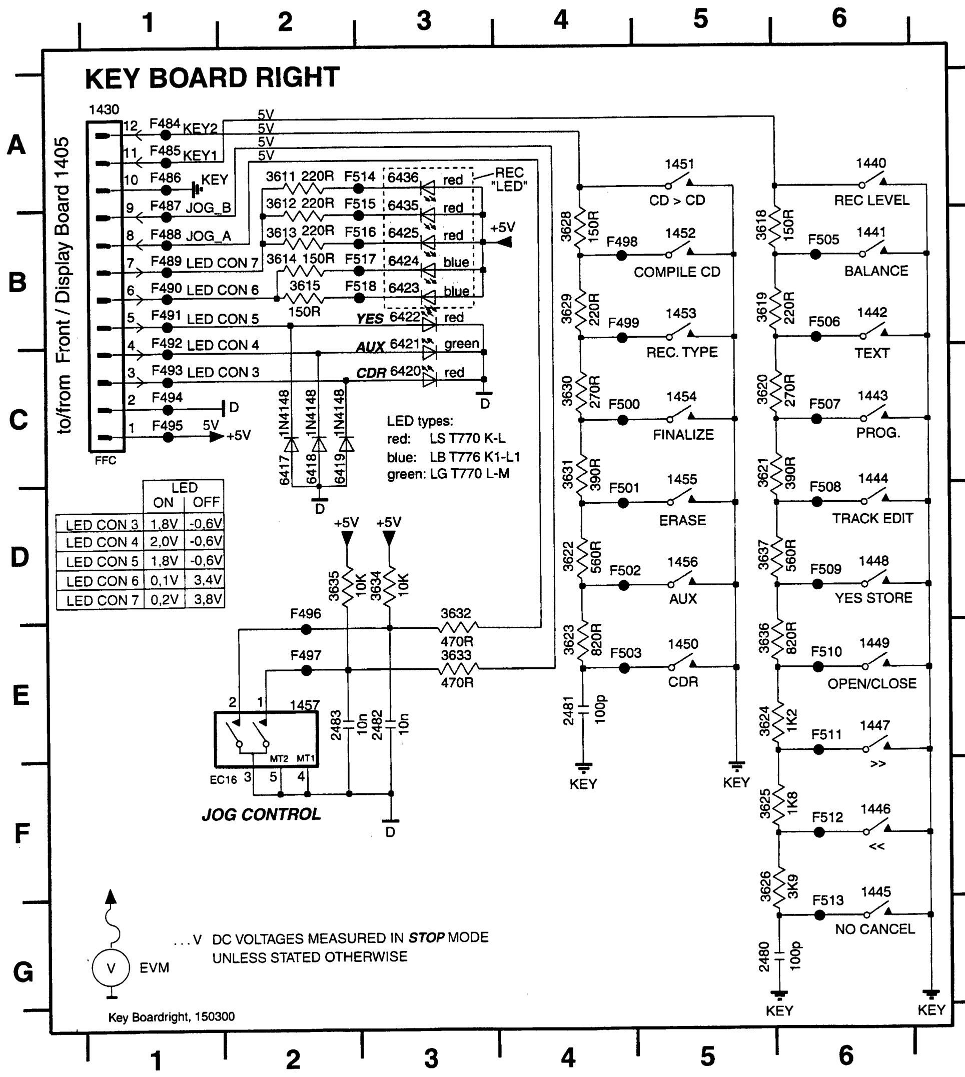
1460	A5
1461	A5
1462	B5
1463	B5
1464	C5
1465	D5
1466	D5
1467	E5
1468	F5
1469	E5
1470	G5
1480	A1
1481	E2
2490	G4
3589	D2
3590	A4
3591	B4
3592	B4
3593	C4
3594	D4
3595	D4
3596	E4
3597	E4
3598	F4
3599	G4
6426	B3
6427	B3
6428	B3
6429	D2
6430	B3
6431	B3
6432	B3
6433	D2
F460	A5
F461	B5
F462	C5
F463	C5
F464	D5
F465	D5
F466	E5
F467	F5
F468	F5
F469	G5
F470	A2
F471	A2
F472	A2
F473	A2
F474	B2
F475	B2
F476	B2
F477	C2
F478	C1
F479	D1
F480	E1

1460	A9
1461	B9
1462	C9
1463	A6
1464	B6
1465	A6
1466	B6
1467	C4
1468	C2
1469	C6
1470	D1
1480	A4
1481	B2
3590	A8
3591	B8
3596	C5
6430	B9
6431	B4
6432	B4
6433	B3
9460	A4
9461	B4
9462	B5
9463	C5


KEY BOARD left / componentside view
STANDBY
1480
on/off
1481
6433
9460
9461
6431
6432
9462
9463
3596
1465
1463
REP.
TEXT
1466
1464
SHUFFLE
DISPL.
1469
CHANGE
1468
STOP
1467
PLAY/PAUSE
1470
OPEN/CLOSE
3590
3591
1460
CD
1461
CD 2
1462
CD 3
6430
Key board left CDR785 stage 5, 310300

2490	B1
3589	D3
3592	D6
3593	D6
3594	D6
3595	D5
3597	C4
3598	C3
3599	C1
6426	E9
6427	D9
6428	C9
6429	E3


KEY BOARD left / copperside view
2490
3599
3598
3597
3592
3595
3594
3593
3589
on/off
STANDBY
6429
CD3
6428
CD2
6427
CD1
6426

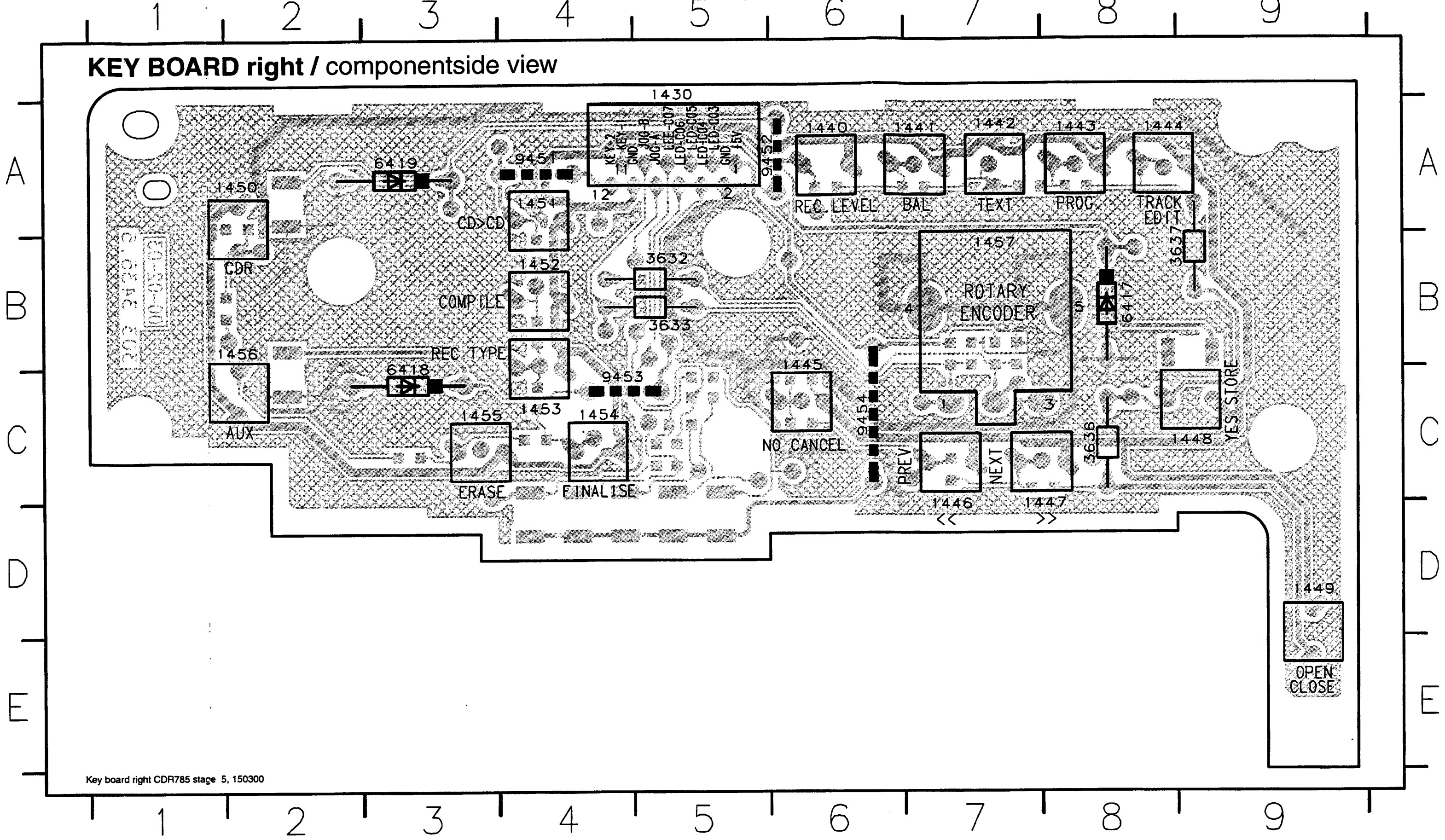

KEY BOARD RIGHT
1 2 3 4 5 6
A B C D E F G
1430
to/from Front / Display Board 1405
FFC
KEY2
KEY1
KEY
JOG_B
JOG_A
LED CON 7
LED CON 6
LED CON 5
LED CON 4
LED CON 3
F484 F485 F486 F487 F488 F489 F490 F491 F492 F493 F494 F495
5V
+5V
D
3611 220R F514 6436 red
3612 220R F515 6435 red
3613 220R F516 6425 red
3614 150R F517 6424 blue
3615 150R F518 6423 blue
REC "LED"
YES 6422 red
AUX 6421 green
CDR 6420 red
6417 1N4148
6418 1N4148
6419 1N4148
3635 10K
3634 10K
F496
F497
3632 470R
3633 470R
1457
EC16
MT2 MT1
2483 10n
2482 10n
JOG CONTROL
3628 150R
3629 220R
3630 270R
3631 390R
3622 560R
3623 820R
2481 100p
F498 F499 F500 F501 F502 F503
1451 CD > CD
1452 COMPILE CD
1453 REC. TYPE
1454 FINALIZE
1455 ERASE
1456 AUX
1450 CDR
KEY
3618 150R
3619 220R
3620 270R
3621 390R
3637 560R
3636 820R
3624 1K2
3625 1K8
3626 3K9
2480 100p
F505 F506 F507 F508 F509 F510 F511 F512 F513
1440 REC LEVEL
1441 BALANCE
1442 TEXT
1443 PROG.
1444 TRACK EDIT
1448 YES STORE
1449 OPEN/CLOSE
1447 >>
1446 <<
1445 NO CANCEL
KEY
EVM
...V DC VOLTAGES MEASURED IN STOP MODE UNLESS STATED OTHERWISE
Key Boardright, 150300

LED types:
red: LS T770 K-L
blue: LB T776 K1-L1
green: LG T770 L-M

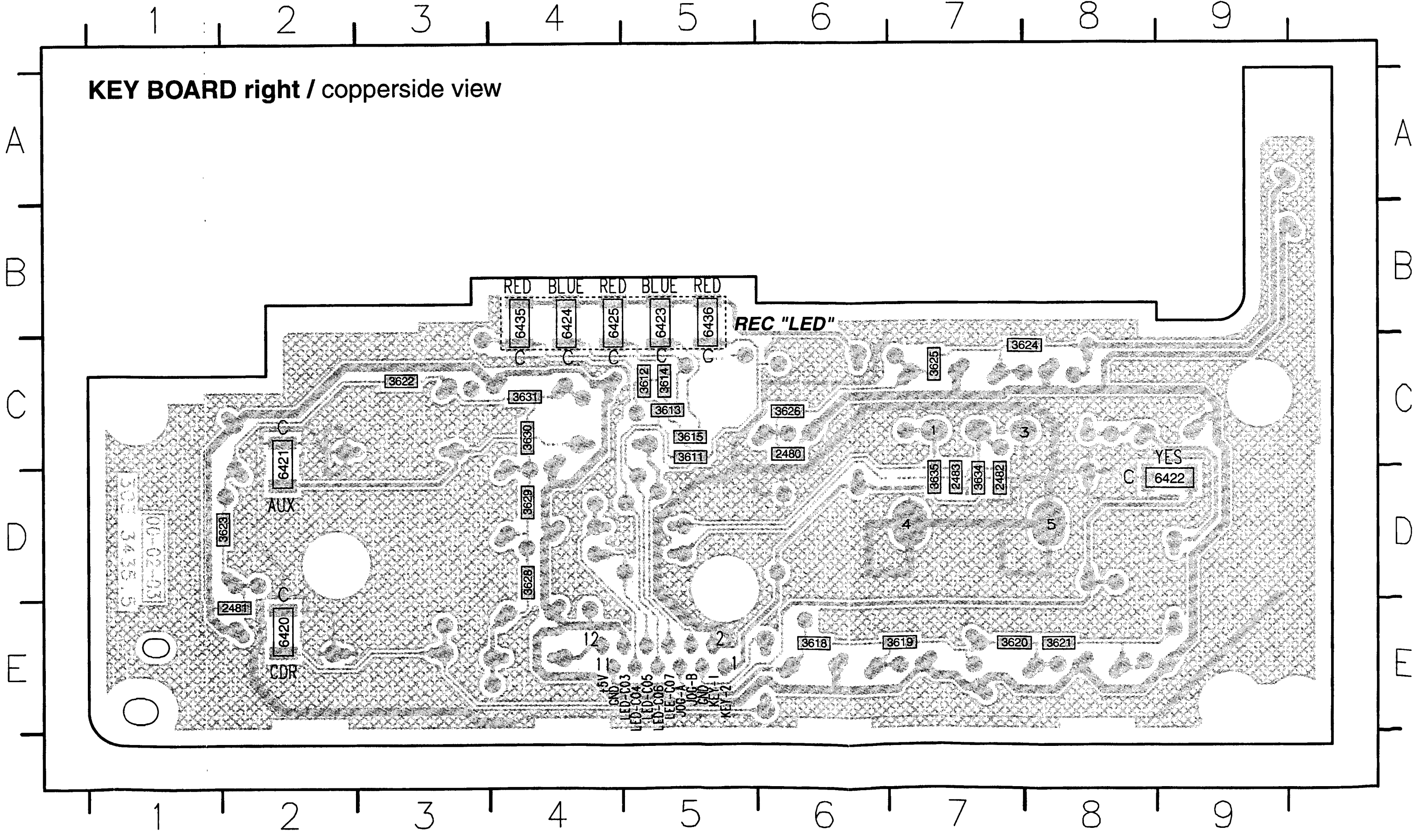
	LED ON	LED OFF
LED CON 3	1,8V	-0,6V
LED CON 4	2,0V	-0,6V
LED CON 5	1,8V	-0,6V
LED CON 6	0,1V	3,4V
LED CON 7	0,2V	3,8V

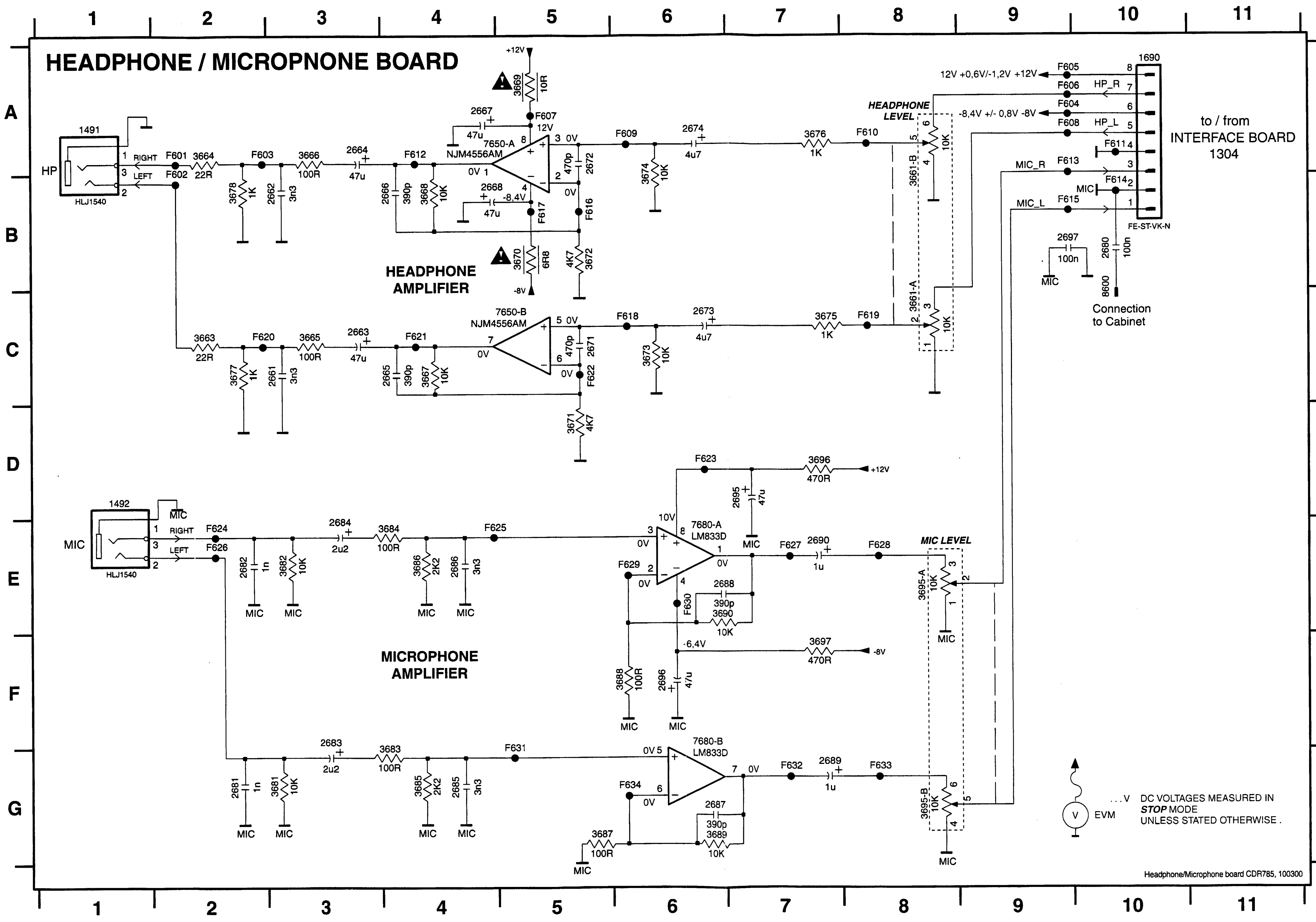
1430	A1
1440	A6
1441	B6
1442	B6
1443	C6
1444	C6
1445	F6
1446	F6
1447	E6
1448	D6
1449	E6
1450	E5
1451	A5
1452	B5
1453	B5
1454	C5
1455	C5
1456	D5
1457	E2
2480	G5
2481	E4
2482	E3
2483	E2
3611	A2
3612	A2
3613	B2
3614	B2
3615	B2
3618	B5
3619	B5
3620	C5
3621	C5
3622	D4
3623	E4
3624	E5
3625	F5
3626	F5
3628	B4
3629	B4
3630	C4
3631	C4
3632	D3
3633	E3
3634	D3
3635	D2
3636	E5
3637	D5
6417	C2
6418	C2
6419	C2
6420	C3
6421	C3
6422	B3
6423	B3
6424	B3
6425	B3
6435	A3
6436	A3
F484	A1
F485	A1
F486	A1
F487	A1
F488	B1
F489	B1
F490	B1
F491	B1
F492	B1
F493	C1
F494	C1
F495	C1
F496	D2
F497	E2
F498	B4
F499	B4
F500	C4
F501	D4
F502	D4
F503	E4
F505	B6
F506	B6
F507	C6
F508	D6
F509	D6
F510	E6
F511	E6
F512	F6
F513	G6
F514	A3
F515	A3
F516	B3
F517	B3
F518	B3

1430	A5
1440	A6
1441	A7
1442	A7
1443	A8
1444	A8
1445	B6
1446	D7
1447	D8
1448	C9
1449	D9
1450	A2
1451	A3
1452	B4
1453	C4
1454	C4
1455	C3
1456	C2
1457	A7
3632	B5
3633	B5
3636	C8
3637	B8
6417	B8
6418	B3
6419	A3
9451	A4
9452	A5
9453	C4
9454	C6


KEY BOARD right / componentside view
1 2 3 4 5 6 7 8 9
A B C D E
1430
1450
CDR
1456
AUX
1451
CD>CD
1452
COMPILE
REC TYPE
1453
1454
1455
ERASE
FINALISE
6419
6418
9451
9452
9453
9454
3632
3633
1440
REC LEVEL
1441
BAL
1442
TEXT
1443
PROG
1444
TRACK EDIT
1457
ROTARY ENCODER
1445
NO CANCEL
PREV
1446
<<
NEXT
1447
>>
3636
3637
6417
1448
YES STORE
1449
OPEN/CLOSE
Key board right CDR785 stage 5, 150300

2480	C6
2481	E2
2482	D7
2483	D7
3611	C5
3612	C5
3613	C5
3614	C5
3615	C5
3618	E6
3619	E7
3620	E7
3621	E8
3622	C3
3623	D2
3624	C8
3625	C7
3626	C6
3628	D4
3629	D4
3630	C4
3631	C4
3634	D7
3635	D7
6420	E2
6421	C2
6422	D9
6423	B5
6424	B4
6425	B4
6435	B4
6436	B5

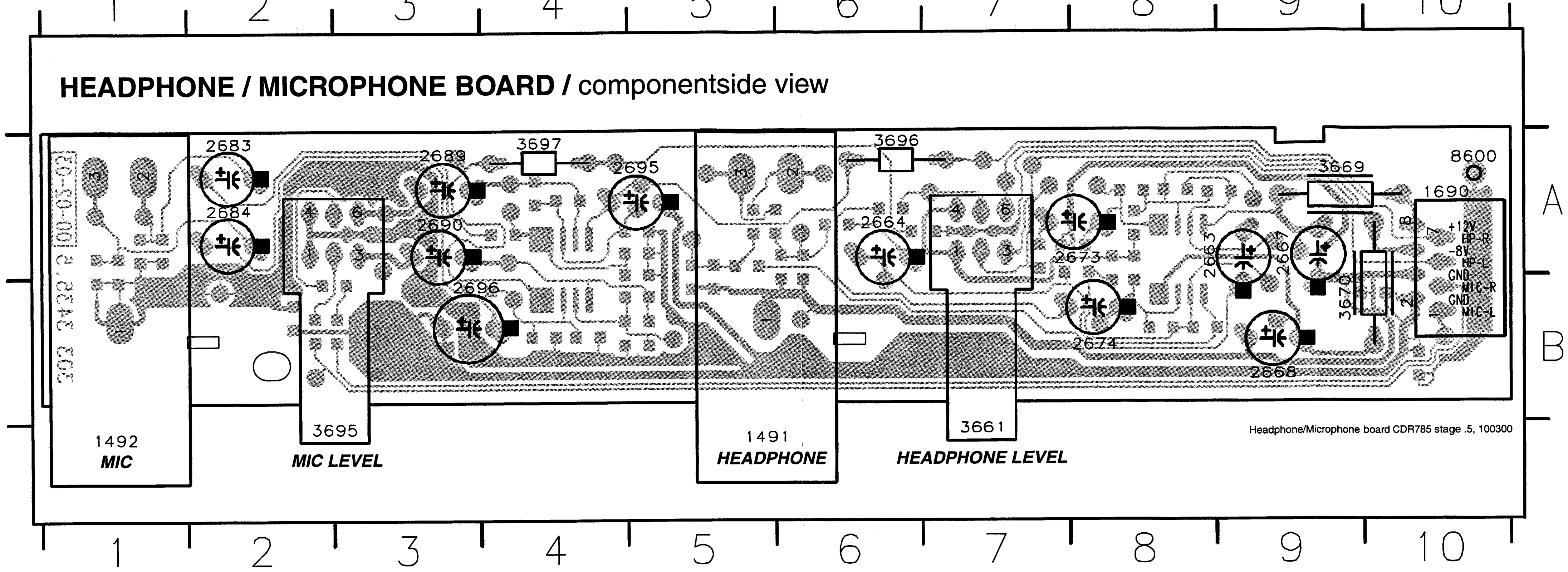

KEY BOARD right / copperside view
1 2 3 4 5 6 7 8 9
A B C D E
RED BLUE RED BLUE RED
6435 6424 6425 6423 6436
REC "LED"
3622
3631
3612
3614
3613
3615
3611
3626
2480
3625
3624
3630
3629
3628
3623
6421
AUX
2481
6420
CDR
3635
2483
3634
2482
YES
6422
3618
3619
3620
3621
12
2


HEADPHONE / MICROPNONE BOARD
HEADPHONE AMPLIFIER
MICROPHONE AMPLIFIER
HP
MIC
1491
1492
HLJ1540
RIGHT
LEFT
7650-A NJM4556AM
7650-B NJM4556AM
7680-A LM833D
7680-B LM833D
+12V
-8V
HEADPHONE LEVEL
MIC LEVEL
3661-A
3661-B
3695-A
3695-B
1690
FE-ST-VK-N
12V +0,6V/-1,2V +12V
-8,4V +/- 0,8V -8V
HP_R
HP_L
MIC_R
MIC_L
MIC
to / from INTERFACE BOARD 1304
8600
Connection to Cabinet
...V DC VOLTAGES MEASURED IN STOP MODE UNLESS STATED OTHERWISE .
EVM
Headphone/Microphone board CDR785, 100300

1491	A1
1492	D1
1690	A10
2661	C3
2662	B3
2663	C3
2664	A3
2665	C4
2666	B4
2667	A4
2668	B4
2671	C5
2672	A5
2673	C6
2674	A6
2680	B10
2681	G2
2682	E2
2683	F3
2684	E3
2685	G4
2686	E4
2687	G6
2688	E6
2689	G7
2690	E7
2695	D7
2696	F6
2697	B9
3661	B8
3663	C2
3664	A2
3665	C3
3666	A3
3667	C4
3668	B4
3669	A5
3670	B5
3671	D5
3672	B5
3673	C6
3674	A6
3675	C7
3676	A7
3677	C2
3678	B2
3681	G3
3682	E3
3683	G4
3684	E4
3685	G4
3686	E4
3687	G5
3688	F6
3689	G6
3690	E6
3695	F8
3696	D7
3697	F7
7650A	A5
7650B	C5
7680A	E6
7680B	G6
8600	C10
F601	A2
F602	B2
F603	A2
F604	A9
F605	A9
F606	A9
F607	A5
F608	A9
F609	A6
F610	A8
F611	A10
F612	A4
F613	A9
F614	B10
F615	B9
F616	B5
F617	B5
F618	C6
F619	C8
F620	C2
F621	C4
F622	C5
F623	D6
F624	E2
F625	E4
F626	E2
F627	E7
F628	E8
F629	E6
F630	E6
F631	G5
F632	G7
F633	G8
F634	G6

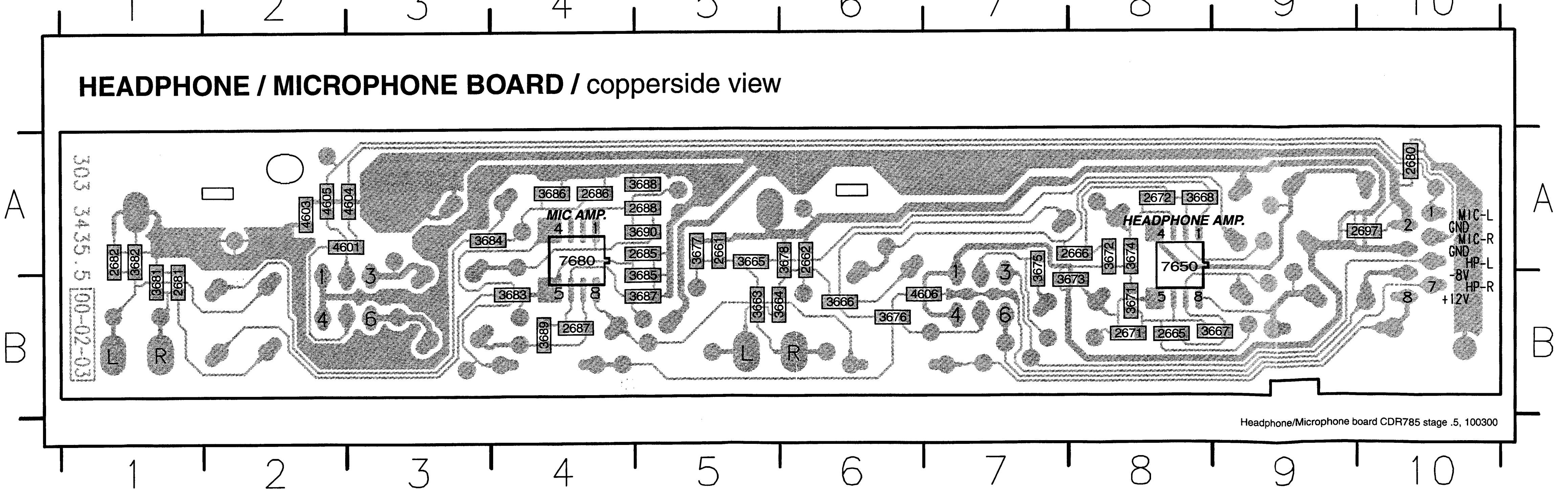
1491	B6	2663	B8	2668	B9	2683	A2	2690	A3	3661	B7	3695	B2	8600	A10
1492	B1	2664	A6	2673	A8	2684	A2	2695	A5	3669	A9	3696	A6		
1690	B10	2667	A9	2674	B8	2689	A3	2696	B3	3670	B10	3697	A4		

HEADPHONE / MICROPHONE BOARD / componentside view

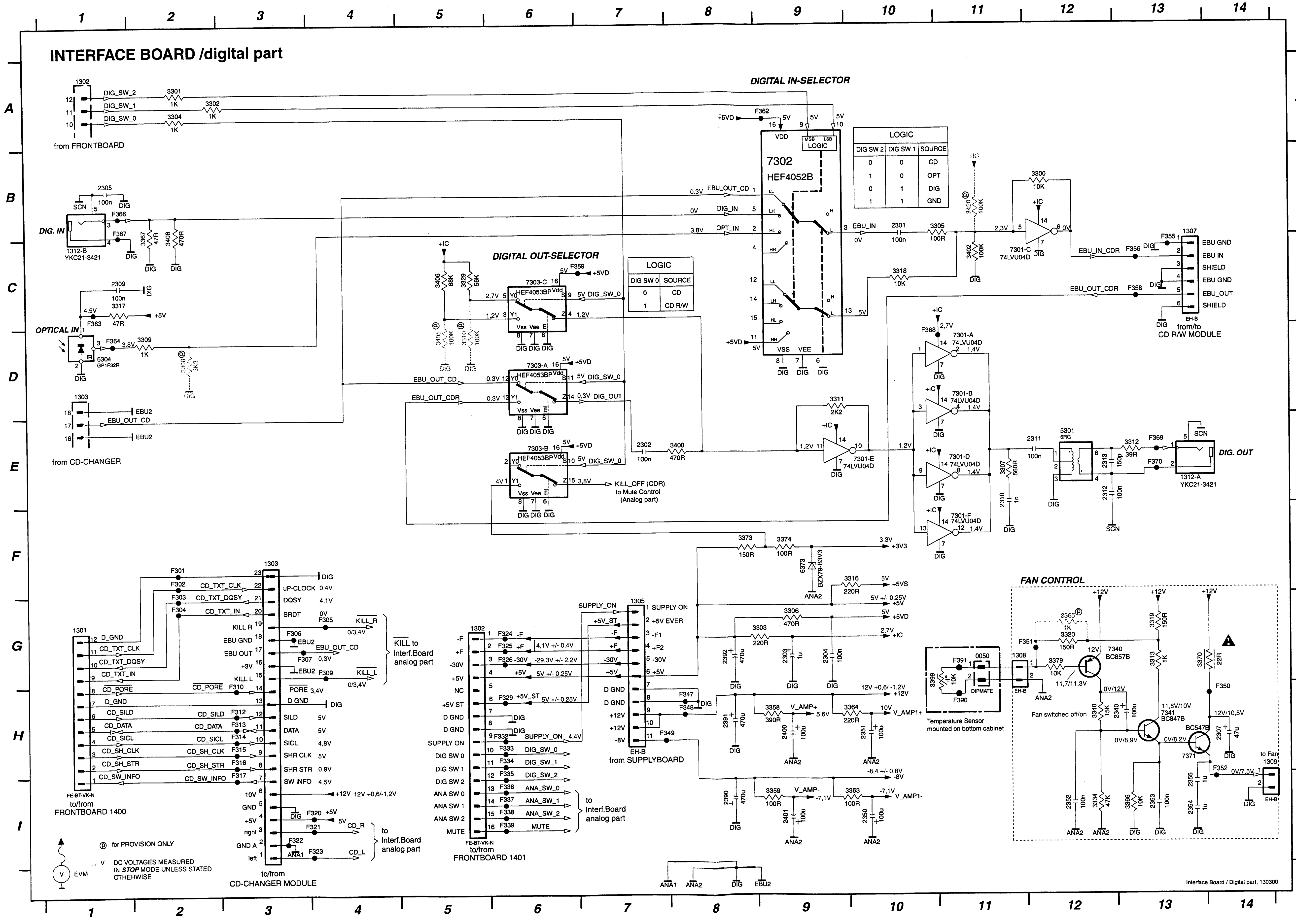

1
2
3
4
5
6
7
8
9
10
A
B
303 3435 .5 00-02-03
2683
2684
2689
2690
2696
3697
2695
3696
2664
2673
2674
2663
2667
2668
3669
8600
1690
3670
+12V
HP-R
-8V
HP-L
GND
MIC-R
GND
MIC-L
1492
MIC
3695
MIC LEVEL
1491
HEADPHONE
3661
HEADPHONE LEVEL
Headphone/Microphone board CDR785 stage .5, 100300

2661	A5	2672	A8	2686	A4	3664	B5	3661	B8	3676	B6	3683	B4	3688	A5	4604	A3
2662	A6	2680	A10	2687	B4	3665	A5	3672	A8	3677	A5	3684	A3	3689	B4	4605	A2
2665	B8	2681	B1	2688	A5	3666	B6	3673	B8	3678	A6	3685	B5	3690	A5	4606	B7
2666	A8	2682	A1	2697	A10	3667	B9	3674	A8	3681	B1	3686	A4	4601	A2	7650	A8
2671	B8	2685	A5	3663	B5	3668	A8	3675	A7	3682	A1	3687	B5	4603	A2	7680	A4

HEADPHONE / MICROPHONE BOARD / copperside view


1
2
3
4
5
6
7
8
9
10
A
B
303 3435 .5 00-02-03
L
R
2682
3682
3681
2681
4603
4605
4604
4601
3684
3686
2686
3688
2688
3690
MIC AMP.
7680
2685
3685
3687
3683
3689
2687
3677
2661
3665
3678
2662
3663
3664
3666
3676
4606
3675
2666
3673
3672
3674
3671
HEADPHONE AMP.
7650
2672
3668
2671
2665
3667
2697
2680
MIC-L
GND
MIC-R
GND
HP-L
-8V
HP-R
+12V
Headphone/Microphone board CDR785 stage .5, 100300

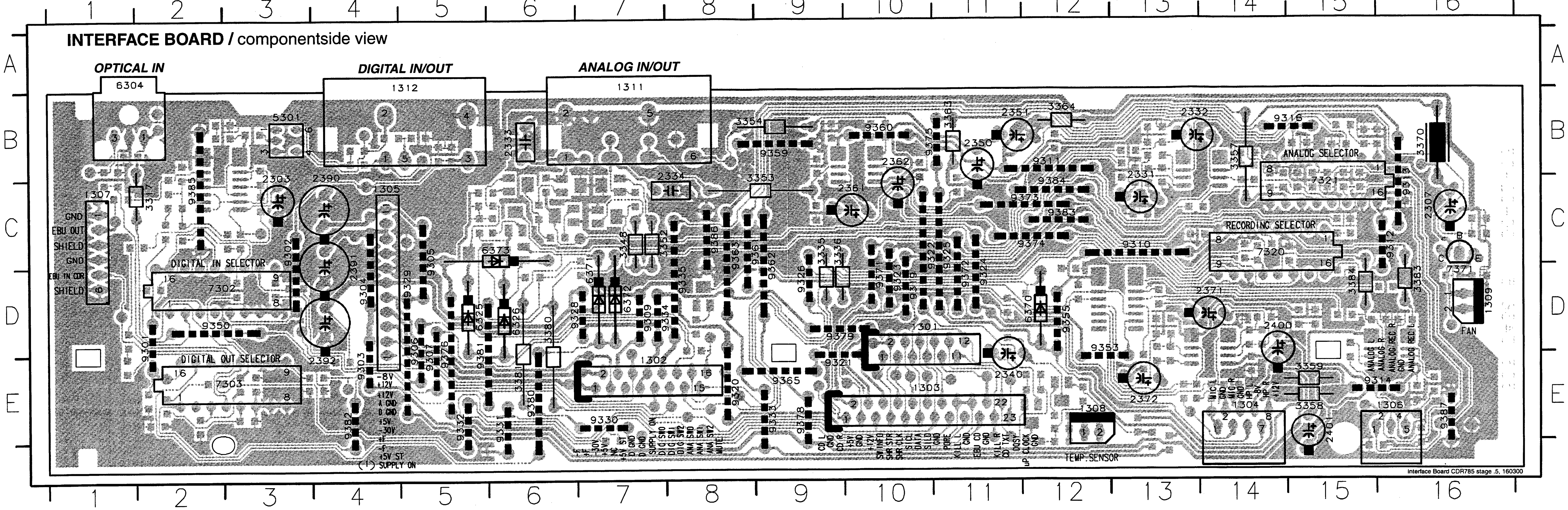
INTERFACE BOARD /digital part


1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
DIGITAL IN-SELECTOR
DIGITAL OUT-SELECTOR
FAN CONTROL
LOGIC
DIG SW 2
DIG SW 1
SOURCE
CD
OPT
DIG
GND
DIG SW 0
CD R/W
7302
HEF4052B
7303-A HEF4053BP
7303-B HEF4053BP
7303-C HEF4053BP
7301-A 74LVU04D
7301-B 74LVU04D
7301-C 74LVU04D
7301-D 74LVU04D
7301-E 74LVU04D
7301-F 74LVU04D
1302
DIG_SW_2
DIG_SW_1
DIG_SW_0
from FRONTBOARD
DIG. IN
1312-B YKC21-3421
OPTICAL IN
6304 GP1F32R
1303
EBU_OUT_CD
from CD-CHANGER
EBU_OUT_CDR
EBU_IN
EBU_IN_CDR
KILL_OFF (CDR) to Mute Control (Analog part)
1307
EBU GND
EBU IN
SHIELD
EBU_OUT
from/to CD R/W MODULE
DIG. OUT
1312-A YKC21-3421
5301 6RG
1301
FE-BT-VK-N
to/from FRONTBOARD 1400
to/from CD-CHANGER MODULE
KILL to Interf.Board analog part
to Interf.Board analog part
1302
to/from FRONTBOARD 1401
1305
EH-B
from SUPPLYBOARD
SUPPLY ON
+5V EVER
-30V
Temperature Sensor mounted on bottom cabinet
DIPMATE
7340 BC857B
7341 BC847B
7371 BC547B
Fan switched off/on
to Fan 1309
6373 BZX79-B3V3
ANA1 ANA2 DIG EBU2
℗ for PROVISION ONLY
EVM
.. V DC VOLTAGES MEASURED IN STOP MODE UNLESS STATED OTHERWISE
Interface Board / Digital part, 130300

1301	G1
1302	G5
1303	F3
1305	G7
1307	C13
1308	G11
1309	H14
1312A	E13
1312B	C1
2301	B10
2302	E7
2303	G9
2304	G9
2305	B1
2307	H14
2309	C1
2310	E11
2311	E12
2312	E12
2313	E12
2340	H13
2350	I10
2351	H10
2352	I12
2353	I13
2354	I13
2355	I13
2390	I8
2391	H8
2392	G8
2400	H9
2401	I9
3300	B12
3301	A2
3302	A2
3303	G9
3304	A2
3305	B11
3306	G9
3307	E11
3308	D2
3309	D2
3310	D5
3311	D9
3312	E13
3313	G13
3316	F10
3317	C1
3318	C10
3319	G13
3320	G12
3329	C5
3334	I12
3340	H12
3358	H9
3359	I9
3363	I10
3364	H10
3365	G12
3366	I13
3367	B2
3370	G13
3373	F8
3374	F9
3379	G12
3400	E8
3402	C11
3405	D5
3406	C5
3408	B2
3420	B11
5301	E12
6304	D1
6373	F9
7301A	D11
7301B	D11
7301C	C11
7301D	E11
7301E	E10
7301F	F11
7302	B9
7303A	D6
7303B	E6
7303C	C6
7340	G12
7341	H13
7371	H13
F301	F2
F302	F2
F303	G2
F304	G2
F305	G4
F306	G3
F307	G4
F309	G4
F310	H3
F312	H3
F313	H3
F314	H3
F315	H3
F316	H3
F317	I3
F320	I4
F321	I4
F322	I3
F323	I4
F324	G6
F325	G6
F326	G6
F329	H6
F332	H6
F333	H6
F334	H6
F335	I6
F336	I6
F337	I6
F338	I6
F339	I6
F347	H8
F348	H8
F349	H7
F350	H14
F351	G12
F352	I14
F355	C13
F356	C13
F358	C13
F359	C7
F362	A9
F363	C1
F364	D1
F366	B1
F367	B1
F368	D10
F369	E13
F370	E13

1301	D10
1302	E7
1303	E10
1304	E14
1305	D5
1306	E16
1307	C1
1308	E12
1309	D16
1311	B7
1312	B5
2303	B3
2307	C16
2331	B13
2332	B13
2333	B6
2334	B8
2340	E11
2350	B11
2351	B11
2361	C10
2362	B10
2371	D14
2372	E13
2390	B4
2391	C4
2392	E4
2400	D14
2401	E15
3317	C2
3335	D9
3336	D10
3348	C7
3352	C7
3353	C9
3354	B8
3357	B14
3358	E15
3359	E15
3363	B11
3364	B12
3370	B16
3380	D6
3381	D6
3383	D16
3384	D15
5301	B3
6304	B2
6325	D5
6326	D6
6370	D12
6371	D7
6372	D7
6373	C6
7302	C3
7303	D3
7320	D14
7321	C15
7371	D16
9301	D2
9302	C3
9303	E4
9304	D4
9305	C5
9306	D5
9307	E5
9309	D7
9310	C13
9311	B12
9312	C16
9313	C16
9314	E15
9316	B15
9319	D10
9320	E8
9321	E9
9322	C10
9323	D10
9324	D11
9325	D11
9326	D9
9328	D6
9329	E5
9330	E7
9331	E6
9332	E5
9333	E9
9334	D7
9335	D8
9350	D2
9353	D12
9355	D12
9359	B9
9360	B10
9361	C9
9362	D9
9363	C8
9365	E9
9371	D10
9372	D11
9373	C11
9374	C12
9375	B10
9376	E5
9378	E9
9379	D9
9380	E6
9381	E6
9382	E4
9383	C13
9384	C12
9385	C2
9386	C8
9387	E16

INTERFACE BOARD / componentside view


1
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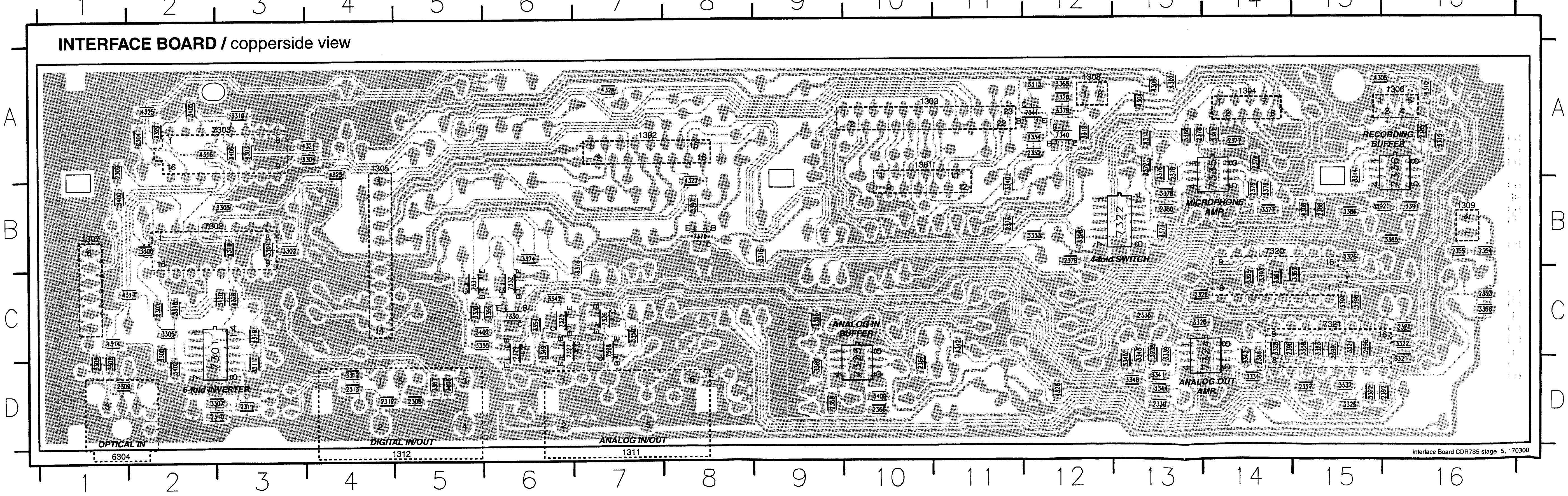
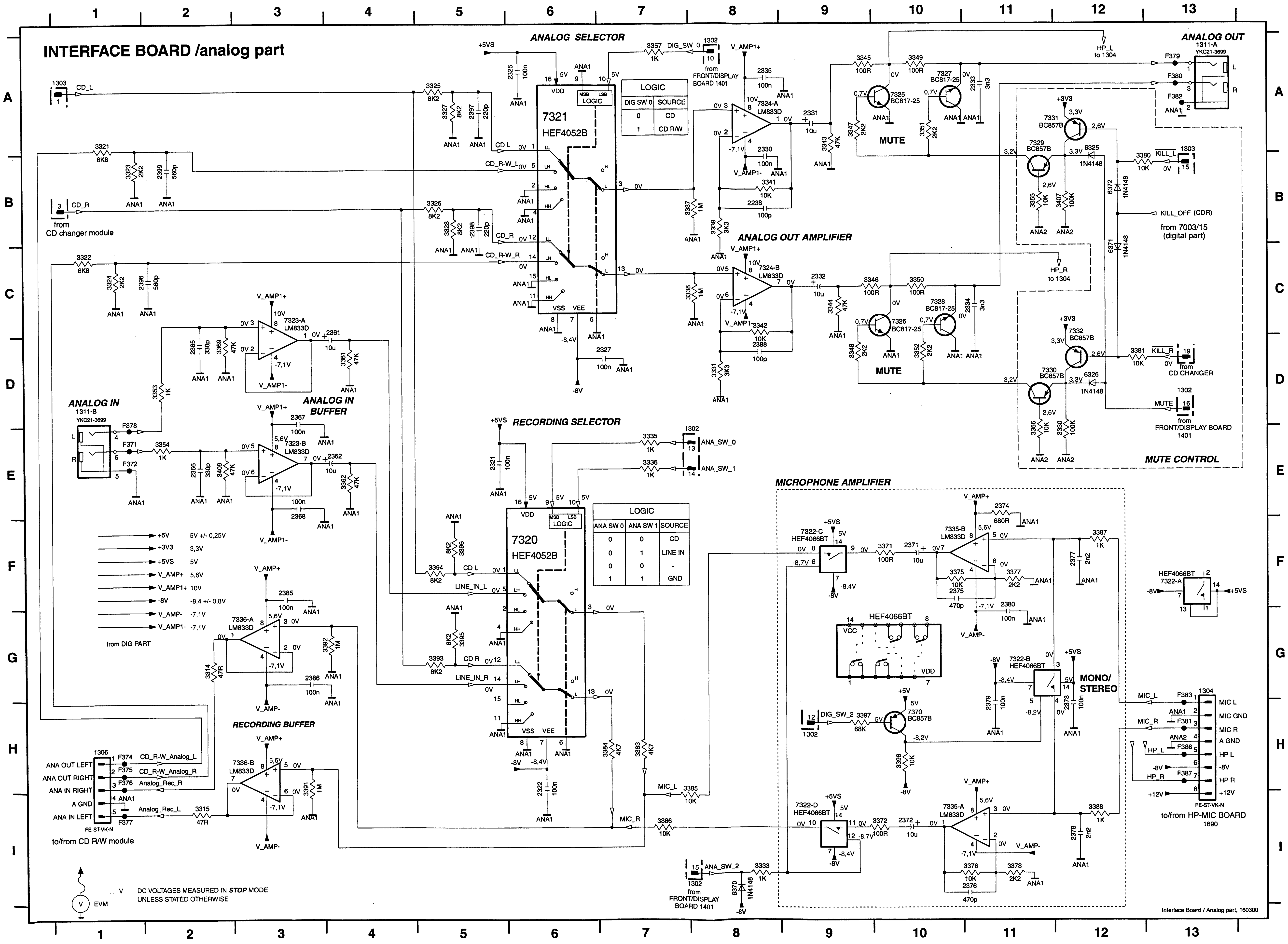
9
10
11
12
13
14
15
16
A
B
C
D
E
OPTICAL IN
DIGITAL IN/OUT
ANALOG IN/OUT
6304
1312
1311
1307
GND
EBU OUT
SHIELD
GND
EBU IN CDR
SHIELD
DIGITAL IN SELECTOR
7302
DIGITAL OUT SELECTOR
7303
1305
1302
1301
1303
ANALOG SELECTOR
7321
RECORDING SELECTOR
7320
1309
FAN
7371
1308
TEMP. SENSOR
1304
1306
ANALOG L
ANALOG R
ANALOG REC R
GND
ANALOG REC L
MIC L
GND
MIC R
GND
HP L
HP R
+12V
-8V
+12V
A GND
D GND
+5V
-30V
+5V ST
SUPPLY ON
Interface Board CDR785 stage .5, 160300

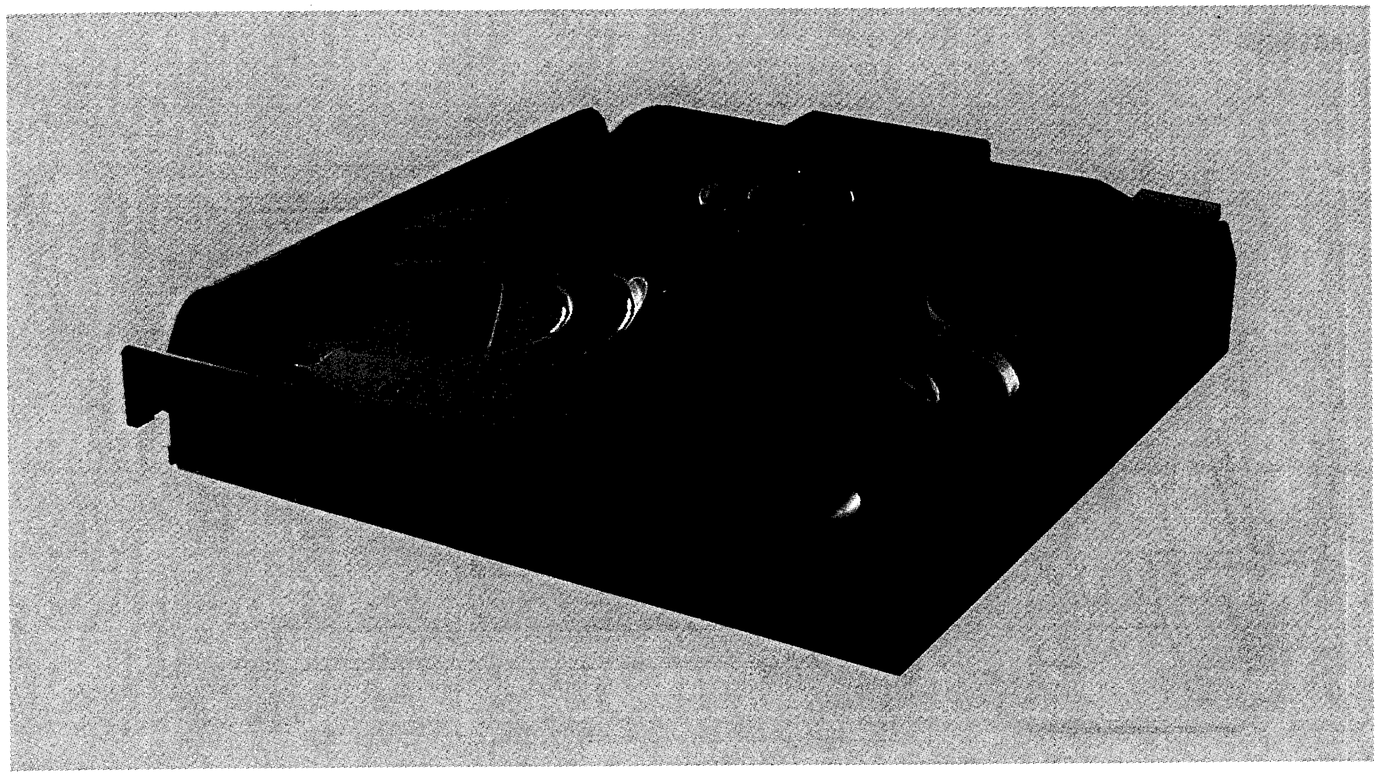
2238	C13
2301	C2
2302	A1
2304	A2
2305	D5
2309	D1
2310	D3
2311	D3
2312	D4
2313	D4
2321	C16
2322	C13
2325	B15
2327	D15
2330	D13
2335	C13
2352	A12
2353	C16
2354	B16
2355	B16
2365	C9
2366	D10
2367	D10
2368	D9
2373	B11
2374	A14
2375	B14
2376	A13
2377	A14
2378	A13
2379	B12
2380	B13
2385	A16
2386	B15
2388	D14
2396	C15
2397	D16
2398	C14
2399	C15
3300	C2
3301	B3
3302	B3
3303	B3
3304	A4
3305	C2
3306	B2
3307	D3
3308	D1
3309	D1
3310	A3
3311	D3
3312	D4
3313	A12
3314	A15
3315	A16
3316	B9
3318	C2
3319	A12
3320	A12
3321	D16
3322	C16
3323	C15
3324	C15
3325	D15
3326	C13
3327	D15
3328	C14
3329	A2
3330	C5
3331	D14
3333	B12
3334	A12
3337	D15
3338	C15
3339	C13
3340	B11
3341	D13
3342	D14
3343	C13
3344	D13
3345	D13
3346	D13
3347	C6
3349	C6
3350	C7
3351	C6
3355	C5
3356	C6
3361	C14
3362	C15
3365	A12
3366	C16
3367	D5
3369	D9
3371	B13
3372	A13
3373	B7
3374	B6
3375	B14
3376	A13
3377	B14
3378	B13
3379	A12
3385	B16
3386	B15
3387	A14
3388	A13
3391	B16
3392	B15
3393	C14
3394	C15
3395	C14
3396	C15
3397	B8
3398	B12
3400	B1
3402	D2
3405	A2
3406	A3
3407	C5
3408	D5
3409	D10
3420	C3
4303	A3
4304	A13
4305	A15
4307	A13
4308	B15
4309	A13
4310	A16
4311	A13
4312	C11
4314	C1
4316	A2
4317	C2
4318	B3
4319	C3
4321	A4
4323	A4
4324	A7
4325	A2
4326	C3
4327	B8
4328	D12
7301	C2
7322	B13
7323	D10
7324	D14
7325	C6
7326	C7
7327	C6
7328	C7
7329	C6
7330	C6
7331	C5
7332	C6
7335	A14
7336	A16
7340	A12
7341	A12
7370	B8

INTERFACE BOARD / copperside view


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
7303
7302
1307
7301
6-fold INVERTER
OPTICAL IN
6304
DIGITAL IN/OUT
1312
ANALOG IN/OUT
1311
1305
1302
1303
1301
1308
ANALOG IN BUFFER
7323
7322
4-fold SWITCH
1304
7335
MICROPHONE AMP
7324
ANALOG OUT AMP.
1306
RECORDING BUFFER
7336
7320
7321
1309
Interface Board CDR785 stage 5, 170300


INTERFACE BOARD /analog part
ANALOG SELECTOR
7321
HEF4052B
LOGIC
DIG SW 0 | SOURCE
0 | CD
1 | CD R/W
ANALOG OUT AMPLIFIER
7324-A LM833D
7324-B LM833D
ANALOG OUT
1311-A YKC21-3699
MUTE
MUTE CONTROL
7325 BC817-25
7326 BC817-25
7327 BC817-25
7328 BC817-25
7329 BC857B
7330 BC857B
7331 BC857B
7332 BC857B
6325 1N4148
6326 1N4148
6371 1N4148
6372 1N4148
KILL_OFF (CDR)
from 7003/15 (digital part)
KILL_L
KILL_R
from CD CHANGER
MUTE
from FRONT/DISPLAY BOARD 1401
HP_L to 1304
HP_R to 1304
DIG_SW_0
from FRONT/DISPLAY BOARD 1401
CD_L
CD_R
from CD changer module
ANALOG IN
1311-B YKC21-3699
ANALOG IN BUFFER
7323-A LM833D
7323-B LM833D
RECORDING SELECTOR
7320
HEF4052B
LOGIC
ANA SW 0 | ANA SW 1 | SOURCE
0 | 0 | CD
0 | 1 | LINE IN
1 | 0 | -
1 | 1 | GND
ANA_SW_0
ANA_SW_1
+5V 5V +/- 0,25V
+3V3 3,3V
+5VS 5V
V_AMP+ 5,6V
V_AMP1+ 10V
-8V -8,4 +/- 0,8V
V_AMP- -7,1V
V_AMP1- -7,1V
from DIG PART
7336-A LM833D
RECORDING BUFFER
7336-B LM833D
1306
ANA OUT LEFT
ANA OUT RIGHT
ANA IN RIGHT
A GND
ANA IN LEFT
CD_R-W_Analog_L
CD_R-W_Analog_R
Analog_Rec_R
Analog_Rec_L
FE-ST-VK-N
to/from CD R/W module
MICROPHONE AMPLIFIER
7322-C HEF4066BT
7322-D HEF4066BT
7322-B HEF4066BT
7322-A HEF4066BT
HEF4066BT
VCC
VDD
7335-A LM833D
7335-B LM833D
7370 BC857B
DIG_SW_2
MONO/ STEREO
1304
MIC L
MIC GND
MIC R
A GND
HP L
-8V
HP R
+12V
to/from HP-MIC BOARD 1690
ANA_SW_2
from FRONT/DISPLAY BOARD 1401
MIC_L
MIC_R
...V DC VOLTAGES MEASURED IN STOP MODE UNLESS STATED OTHERWISE
EVM
Interface Board / Analog part, 160300

1304	G13
1306	H1
1311A	A13
1311B	D1
2238	B8
2321	E5
2322	H6
2325	A6
2327	D7
2330	A8
2331	A9
2332	C9
2333	A11
2334	C11
2335	A8
2361	C4
2362	E4
2365	D2
2366	E2
2367	D3
2368	E3
2371	F10
2372	I10
2373	H12
2374	E11
2375	F10
2376	I11
2377	F12
2378	I12
2379	H11
2380	F11
2385	F3
2386	G3
2388	D8
2396	C1
2397	A5
2398	B5
2399	B2
3314	G2
3315	I2
3321	A1
3322	C1
3323	B1
3324	C1
3325	A5
3326	B5
3327	A5
3328	B5
3330	E12
3331	D8
3333	I8
3335	E7
3336	E7
3337	B8
3338	C8
3339	B8
3341	B8
3342	C8
3343	A9
3344	C9
3345	A9
3346	C9
3347	A9
3348	D9
3349	A10
3350	C10
3351	A10
3352	D10
3353	D2
3354	E2
3355	B11
3356	E11
3357	A7
3361	D4
3362	E4
3369	D2
3371	F10
3372	I10
3375	F10
3376	I11
3377	F11
3378	I11
3380	B12
3381	D12
3383	H7
3384	H7
3385	H7
3386	I7
3387	F12
3388	I12
3391	H3
3392	G4
3393	G5
3394	F5
3395	G5
3396	F5
3397	H9
3398	H10
3407	B12
3409	E2
6325	A12
6326	D12
6370	I8
6371	C12
6372	B12
7320	F6
7321	A6
7322A	F13
7322B	G11
7322C	F9
7322D	I9
7323A	C3
7323B	E3
7324A	A8
7324B	C8
7325	A10
7326	C10
7327	A10
7328	C10
7329	A11
7330	D12
7331	A12
7332	C12
7335A	I10
7335B	F10
7336A	G3
7336B	H3
7370	H10
F371	E1
F372	E1
F374	H1
F375	H1
F376	H1
F377	I1
F378	D2
F379	A13
F380	A13
F381	H13
F382	A13
F383	G13
F386	H13
F387	H13



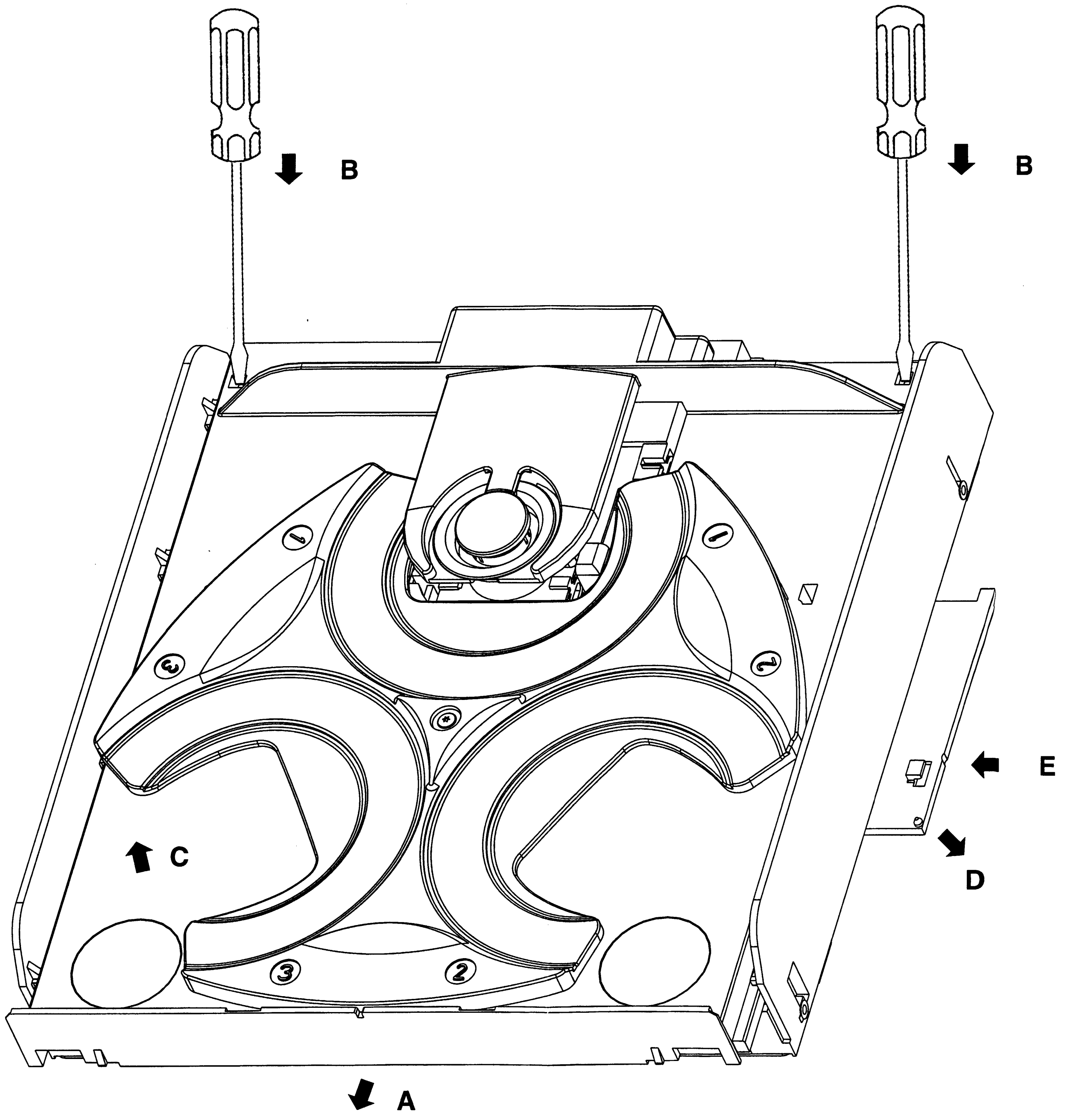
3CDC99-DS Module

(3 Disc Carousel Changer)

TABLE OF CONTENTS

Dismantling Hints..8-1
Service Hints...8-2
Lubrication Instructions ....8-2 to 8-3
ESD Warnings...8-3
Blockdiagram...8-4
Wiring 8-4
Circuit Diagram part1...................................8-5
Component Layout 8-6
Circuit Diagram part2...................................8-7
Exploded View.....................................8-8 to 8-9
Mechanical Partslist......................................8-9
Electrical Partslist.......................................10-15

Dismantling Hints



Dismantling of Drawer

→ **A** Pull drawer outwards
→ **B** Unlock drawer with screwdriver
→ **C** Lift drawer to demount from chassis

Dismantling of Flex Plate

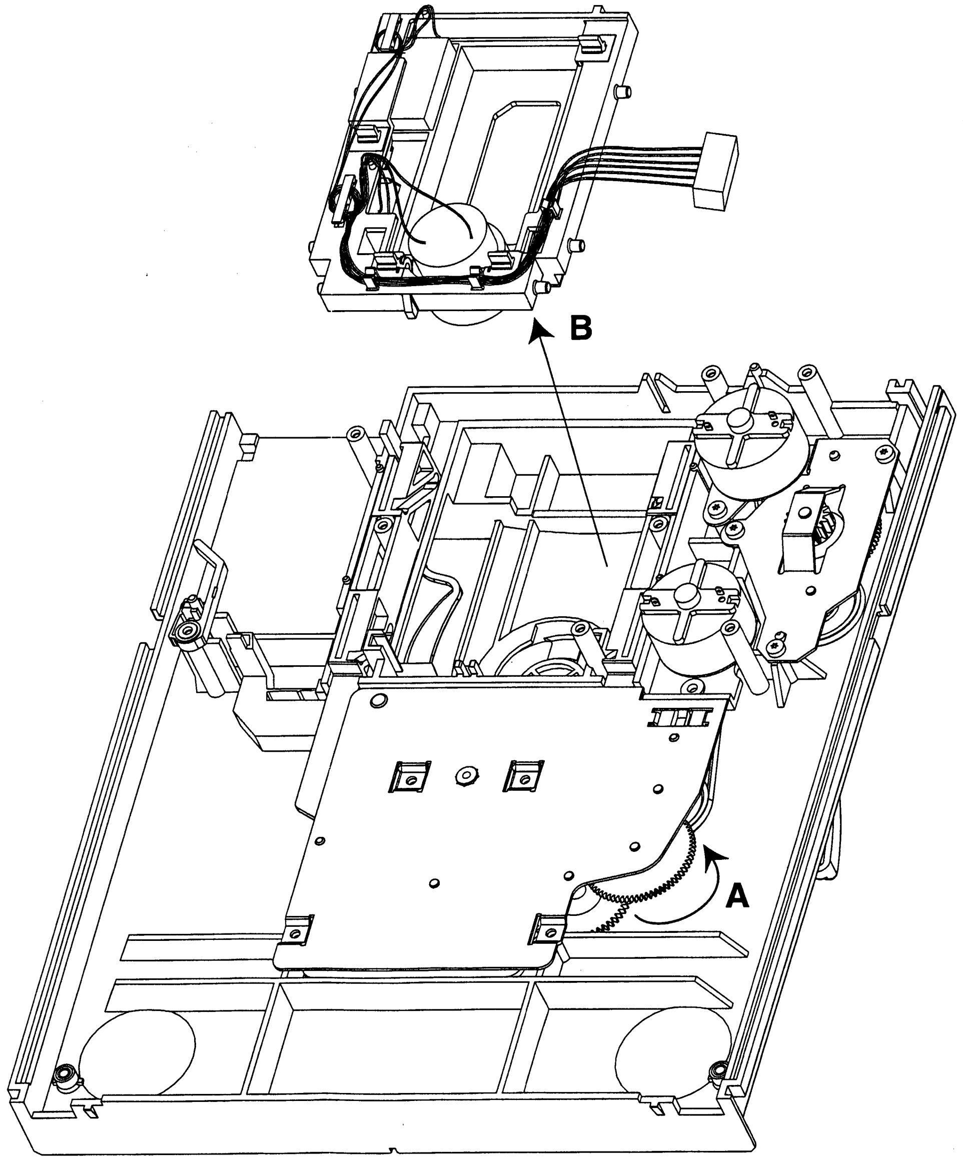
→ **D** Lift plate to unlock pin from bottom plate
→ **E** Move plate inwards to demount from bottom plate

Service Hints

Replacement of CD Drive

See also exploded view of changer mechanism.

1. Dismantle printed circuit board: remove 5 screws.
2. Disconnect flexfoil cable and JST connector.
   Pay attention to WARNING!
3. Loosen 2 screws (pos 107,108) and remove CD drive-lockings (pos 105,106).
4. Turn gearwheel (pos 42) of disc change mechanism by finger to move CD drive support in upper position as shown in picture below Ⓐ.
5. Dismantle CD drive support (pos 95) Ⓑ.
6. Replace CD drive (pos 100). The wire tree of JST connector has to be desoldered and resoldered on the new CD drive again.

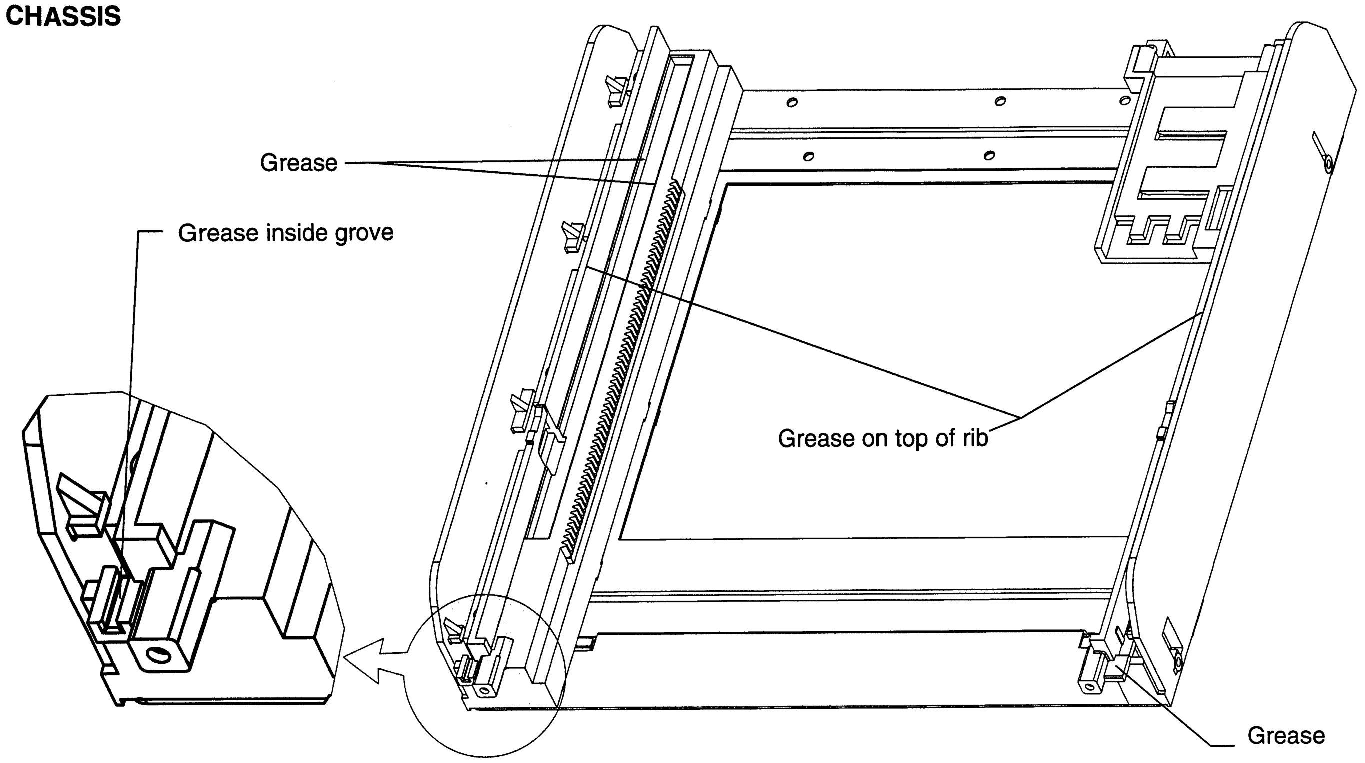


Mounting of Carousel

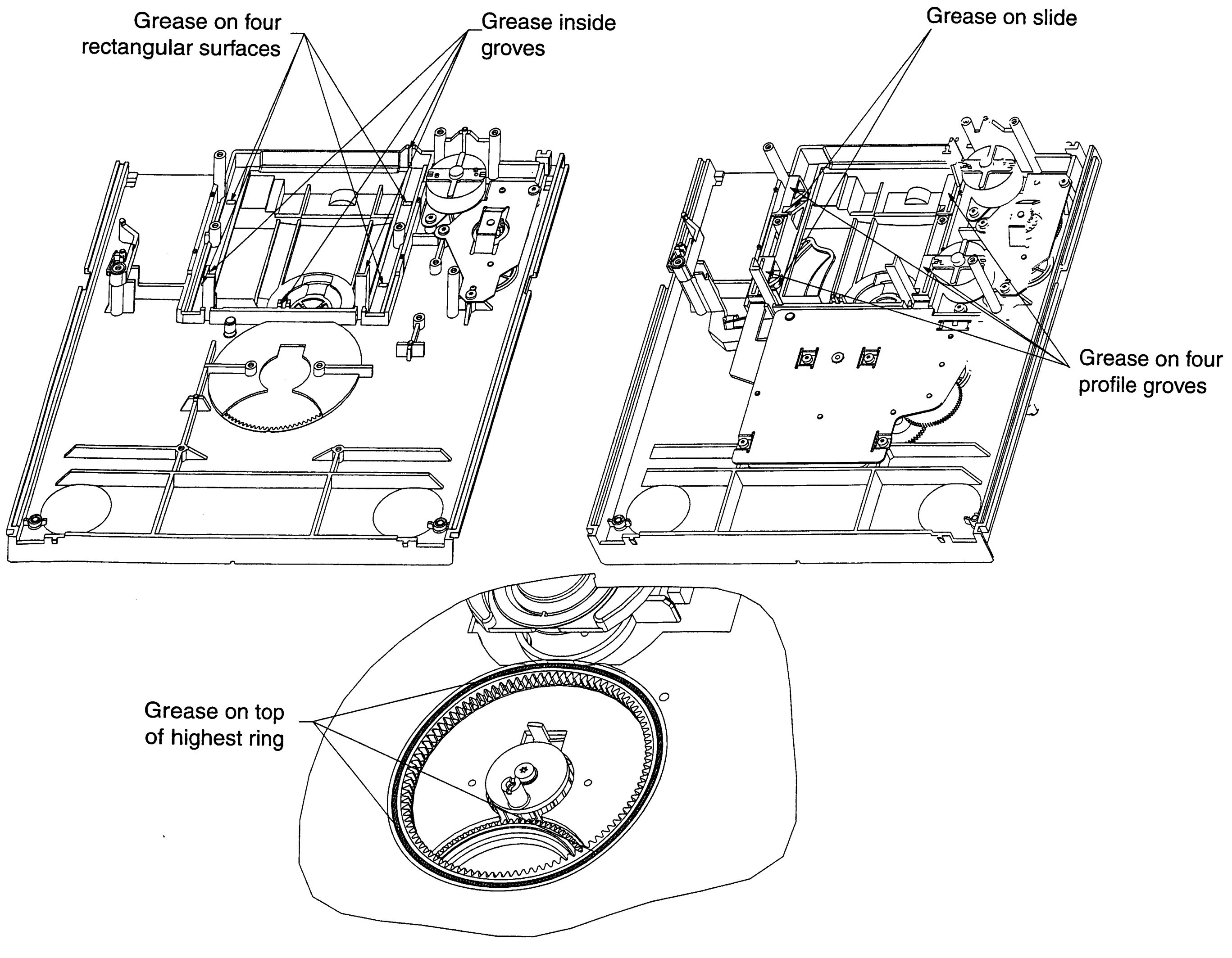
1. Turn gearwheel (pos 42) of disc change mechanism by finger until CD drive is in play position.
2. Mount carousel (pos 115) so that disc is positioned right on turntable. Carousel position number doesn´t matter.

Lubrication Instructions

CHASSIS

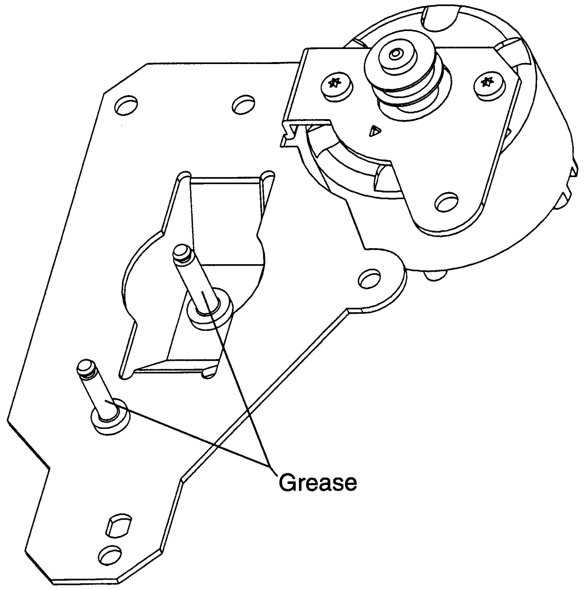

Grease
Grease inside grove
Grease on top of rib
Grease

DRAWER

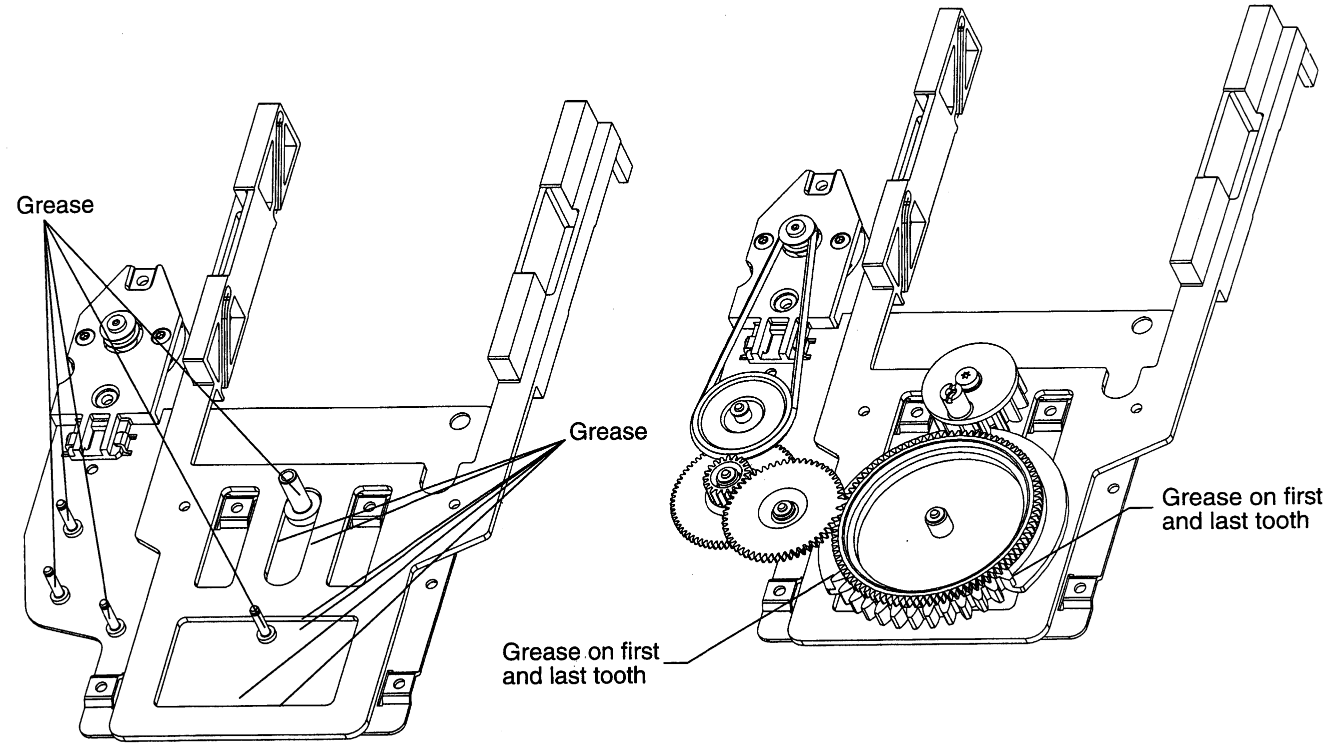

Grease on four rectangular surfaces
Grease inside groves
Grease on slide
Grease on four profile groves
Grease on top of highest ring

Lubrication Instructions

DRAWER MECHANISM



DISC CHANGE MECHANISM


Grease
Grease
Grease on first and last tooth
Grease on first and last tooth

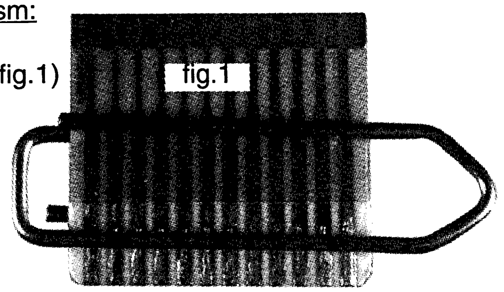
Use only grease **Polylub GLY 801** service codenumber 4822 390 10136

WARNING

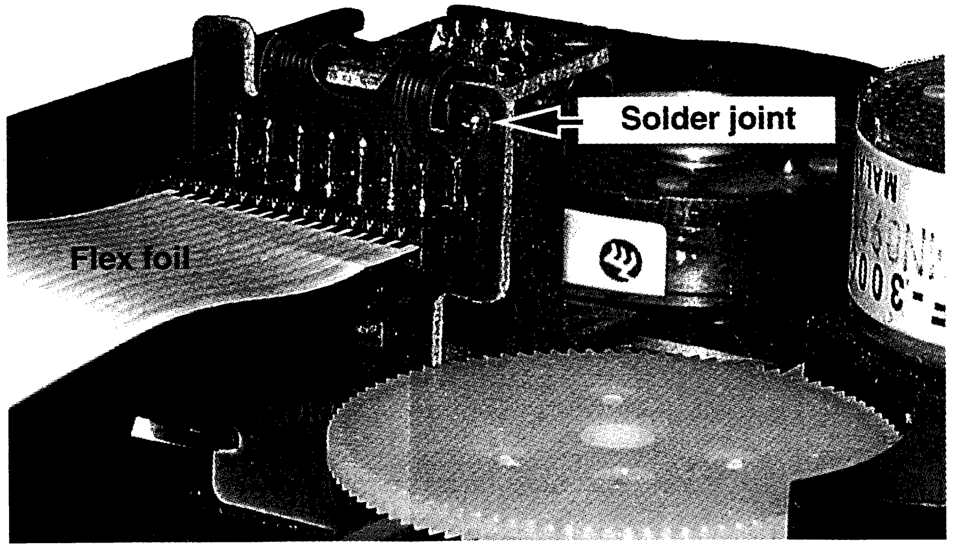
CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CD MECHANISM. THAT´S WHY, BESIDES THE SAFETY MEASURES LIKE
- ***SWITCH OFF POWER SUPPLY***
- ***ESD PROTECTION***

ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

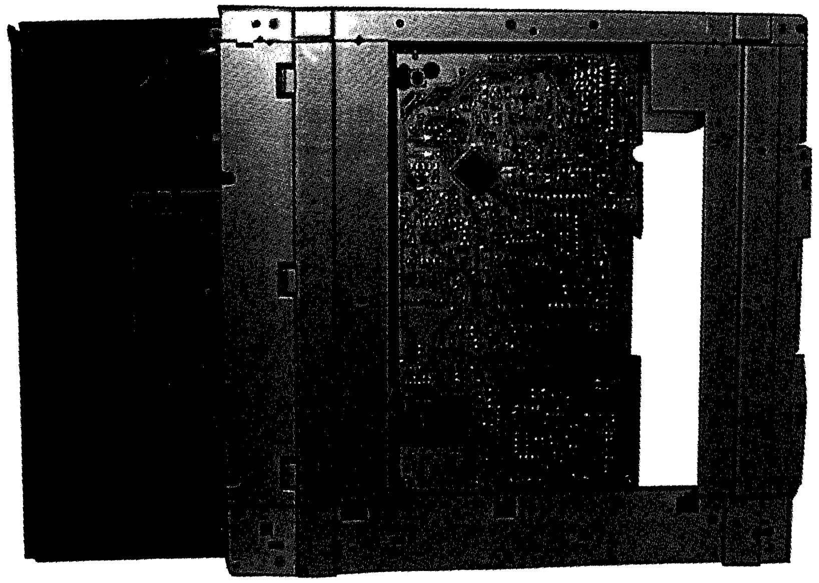
The following steps have to be done when replacing the CD mechanism:
1. Disconnect flexfoil cable from old CD drive
2. Put a paper clip onto the flexfoil cable to short-circuit connections (fig.1)
3. Remove old CD drive
4. Remove paper clip from flexfoil cable
5. Connect flexfoil cable to new CD drive
6. Position new CD drive on its studs
7. Remove soldered short-circuit from Laserunit (see below)



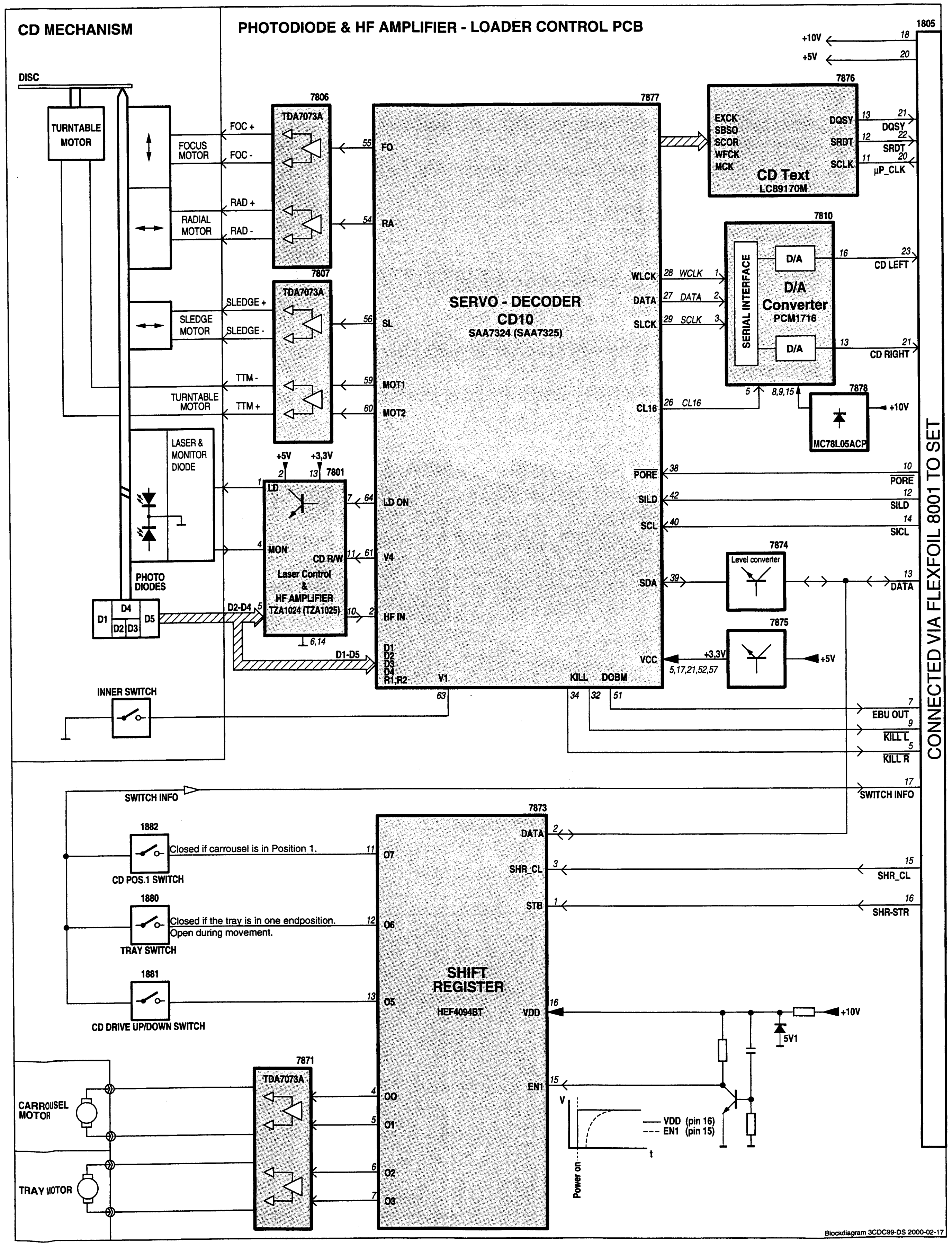
Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laser diode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connecting the drive to the set.



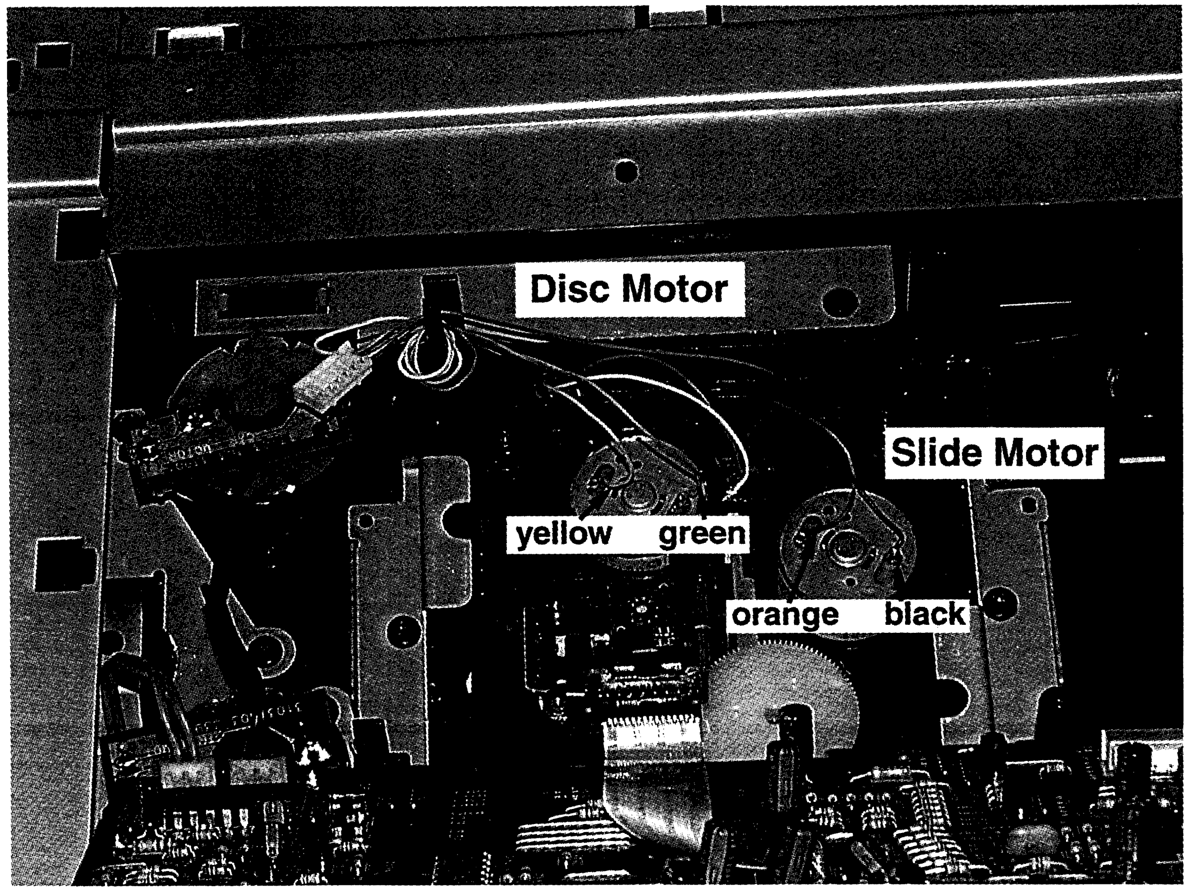
Service Position



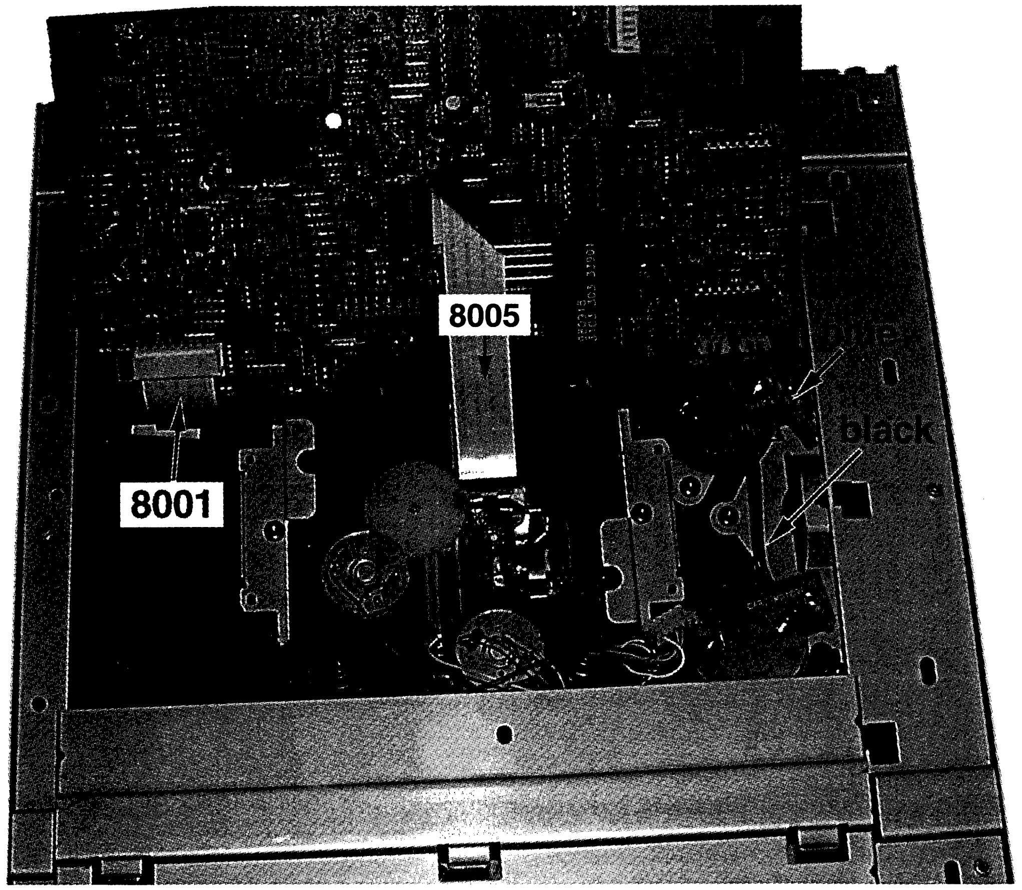
Blockdiagram


CD MECHANISM
PHOTODIODE & HF AMPLIFIER - LOADER CONTROL PCB
DISC
TURNTABLE MOTOR
FOCUS MOTOR
RADIAL MOTOR
SLEDGE MOTOR
TURNTABLE MOTOR
LASER & MONITOR DIODE
PHOTO DIODES
D1 D2 D3 D4 D5
INNER SWITCH
7806 TDA7073A
7807 TDA7073A
FOC + FOC - RAD + RAD - SLEDGE + SLEDGE - TTM - TTM +
7801 LD MON CD R/W Laser Control & HF AMPLIFIER TZA1024 (TZA1025)
+5V +3,3V
D2-D4 D1-D5
7877 SERVO - DECODER CD10 SAA7324 (SAA7325)
FO RA SL MOT1 MOT2 LD ON V4 HF IN D1 D2 D3 D4 R1,R2 V1 KILL DOBM
WLCK DATA SLCK CL16 PORE SILD SCL SDA VCC
7876 CD Text LC89170M
EXCK SBSO SCOR WFCK MCK DQSY SRDT SCLK
7810 SERIAL INTERFACE D/A D/A Converter PCM1716
7878 MC78L05ACP +10V
7874 Level converter
7875 +3,3V +5V
1805 +10V +5V DQSY SRDT µP_CLK CD LEFT CD RIGHT PORE SILD SICL DATA EBU OUT KILL L KILL R SWITCH INFO SHR_CL SHR-STR
CONNECTED VIA FLEXFOIL 8001 TO SET
SWITCH INFO
1882 Closed if carrousel is in Position 1. CD POS.1 SWITCH
1880 Closed if the tray is in one endposition. Open during movement. TRAY SWITCH
1881 CD DRIVE UP/DOWN SWITCH
7873 SHIFT REGISTER HEF4094BT
DATA SHR_CL STB VDD EN1 O7 O6 O5 O0 O1 O2 O3
+10V 5V1
VDD (pin 16) EN1 (pin 15) Power on
7871 TDA7073A
CARROUSEL MOTOR
TRAY MOTOR
Blockdiagram 3CDC99-DS 2000-02-17

Wiring of CD Drive

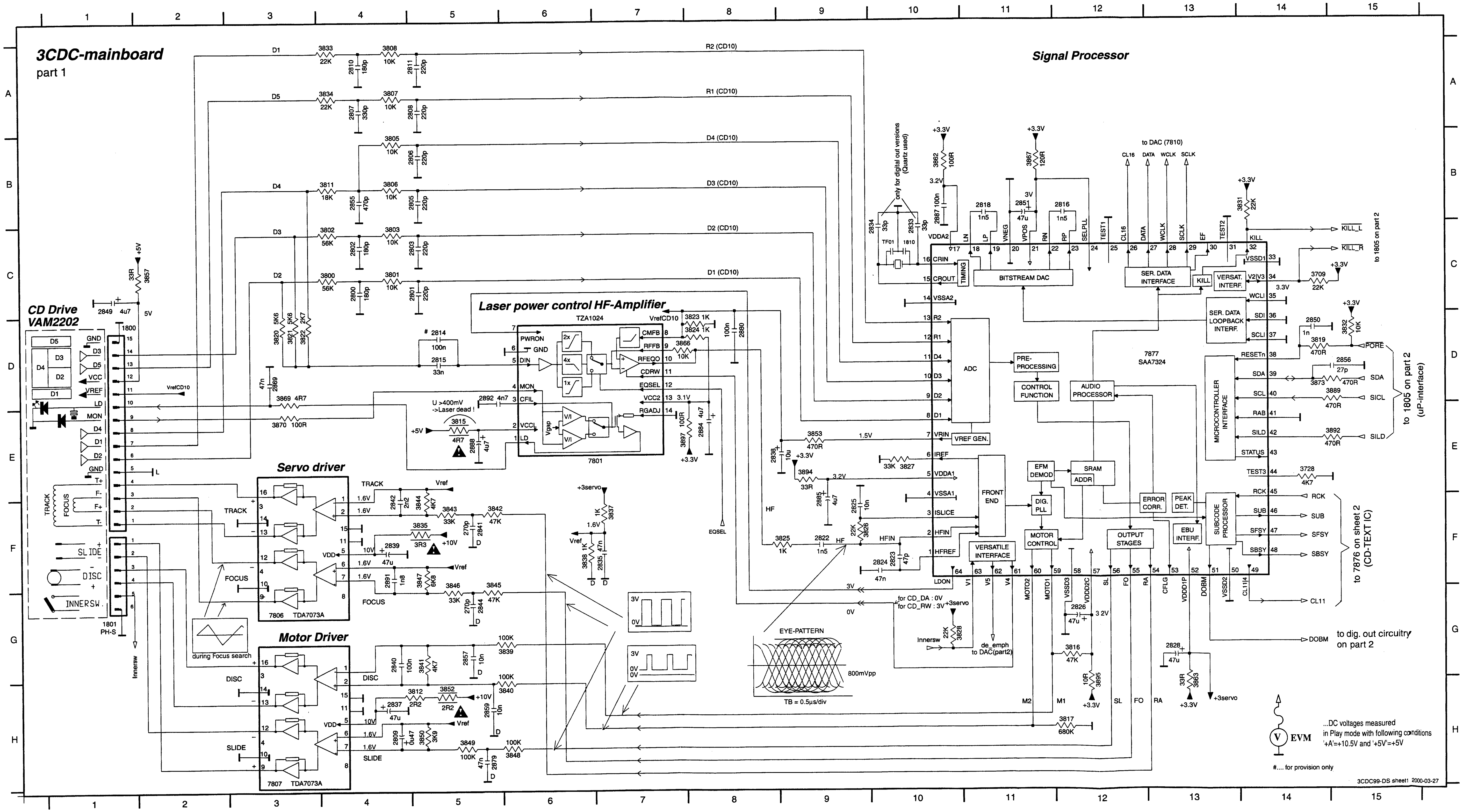

Disc Motor
Slide Motor
yellow
green
orange
black

Pict. 1


8005
8001
black

Pict. 2

1800	D2
1801	G1
1810	C10
2800	C4
2801	C5
2802	C4
2803	C5
2805	B5
2806	B5
2807	A4
2808	A5
2809	H4
2810	A4
2811	A5
2814	D5
2815	D5
2816	B12
2818	B11
2822	F9
2823	F10
2824	F10
2825	F9
2826	G12
2828	G13
2833	C10
2834	C10
2835	F7
2837	H4
2838	E8
2839	F4
2840	G4
2841	F5
2842	F4
2844	G5
2849	C1
2850	D14
2851	B11
2855	B4
2856	D15
2857	G5
2859	H5
2869	D3
2879	H5
2880	D8
2884	E8
2885	F9
2887	B10
2888	E5
2891	F4
2892	D5
3709	C14
3728	E14
3800	C4
3801	C4
3802	C4
3803	C4
3805	B4
3806	B4
3807	A4
3808	A4
3811	B4
3812	H5
3815	E5
3816	G12
3817	H12
3819	D14
3820	D3
3821	D3
3822	D3
3823	D8
3824	D8
3825	F9
3826	F9
3827	E10
3828	G10
3831	B14
3832	D15
3833	A4
3834	A4
3835	F5
3837	F7
3838	F6
3839	G6
3840	H6
3841	G5
3842	F5
3843	F5
3844	F5
3845	F5
3846	F5
3847	F5
3848	H6
3849	H5
3850	H5
3852	H5
3853	E9
3857	C2
3862	B10
3863	H13
3866	D7
3867	B11
3869	D3
3870	E3
3873	D14
3889	D15
3892	E15
3894	E9
3895	H12
3897	E7
7801	E7
7806	G3
7807	H3
7877	D12



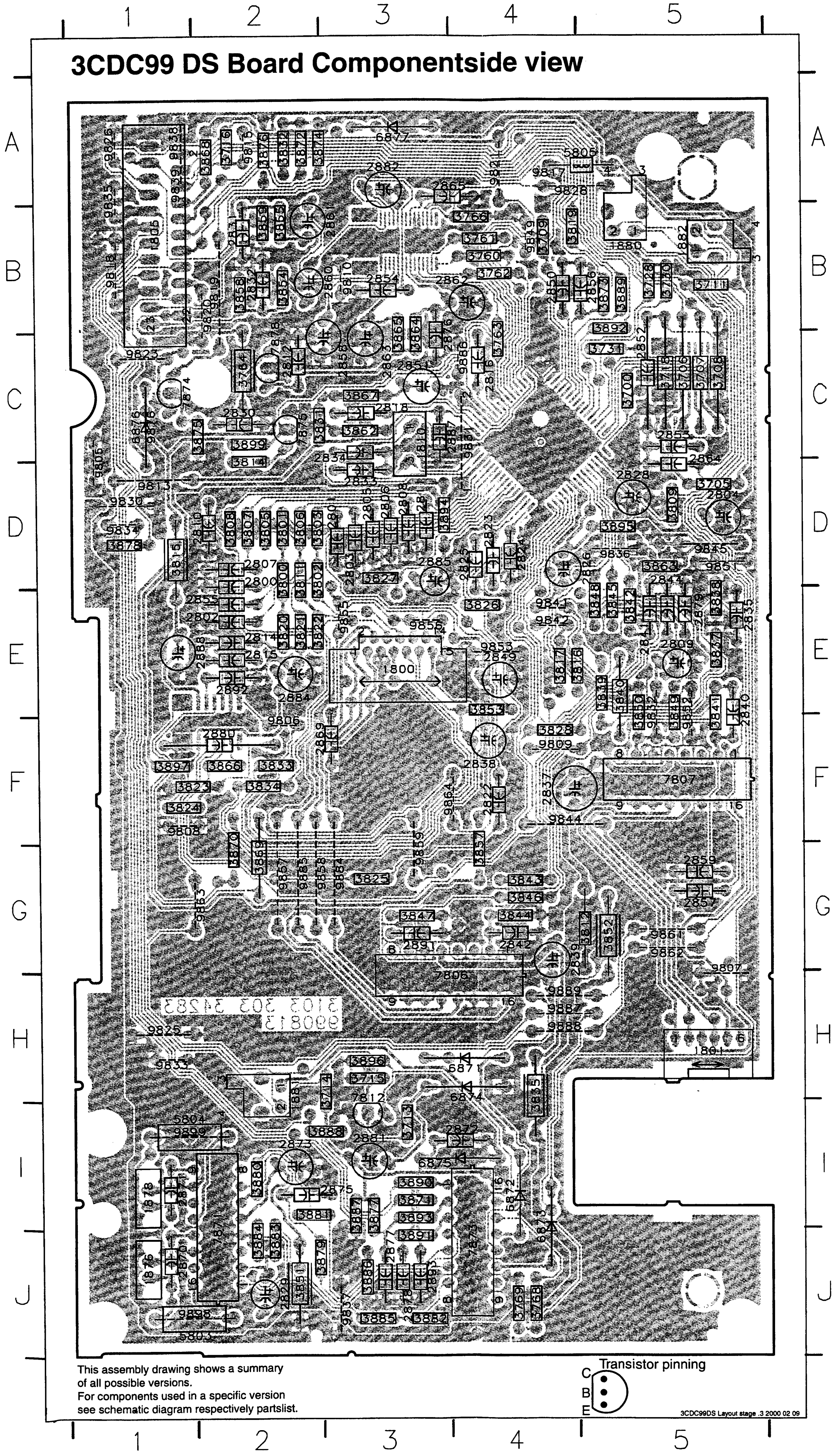
3CDC-mainboard
part 1
Signal Processor
CD Drive
VAM2202
Laser power control HF-Amplifier
TZA1024
7801
Servo driver
7806 TDA7073A
Motor Driver
7807 TDA7073A
7877
SAA7324
ADC
PRE-PROCESSING
CONTROL FUNCTION
AUDIO PROCESSOR
BITSTREAM DAC
SER. DATA INTERFACE
VERSAT. INTERF.
SER. DATA LOOPBACK INTERF.
MICROCONTROLLER INTERFACE
VREF GEN.
FRONT END
EFM DEMOD
SRAM
ADDR
DIG. PLL
MOTOR CONTROL
ERROR CORR.
PEAK DET.
OUTPUT STAGES
EBU INTERF.
SUBCODE PROCESSOR
VERSATILE INTERFACE
TIMING
TRACK
FOCUS
DISC
SLIDE
INNERSW.
1800
1801
PH-S
to DAC (7810)
to 1805 on part 2
to 1805 on part 2 (uP-interface)
to 7876 on sheet 2 (CD-TEXT IC)
to dig. out circuitry on part 2
only for digital out versions (Quartz used)
U >400mV ->Laser dead !
for CD_DA : 0V
for CD_RW : 3V
de_emph to DAC(part2)
during Focus search
EYE-PATTERN
800mVpp
TB = 0.5µs/div
KILL_L
KILL_R
PORE
SDA
SICL
SILD
RCK
SUB
SFSY
SBSY
CL11
DOBM
R2 (CD10)
R1 (CD10)
D4 (CD10)
D3 (CD10)
D2 (CD10)
D1 (CD10)
EVM

...DC voltages measured in Play mode with following conditions '+A'=+10.5V and '+5V'=+5V

#.... for provision only

3CDC99-DS sheet1 2000-03-27

3CDC99 DS Board Componentside view



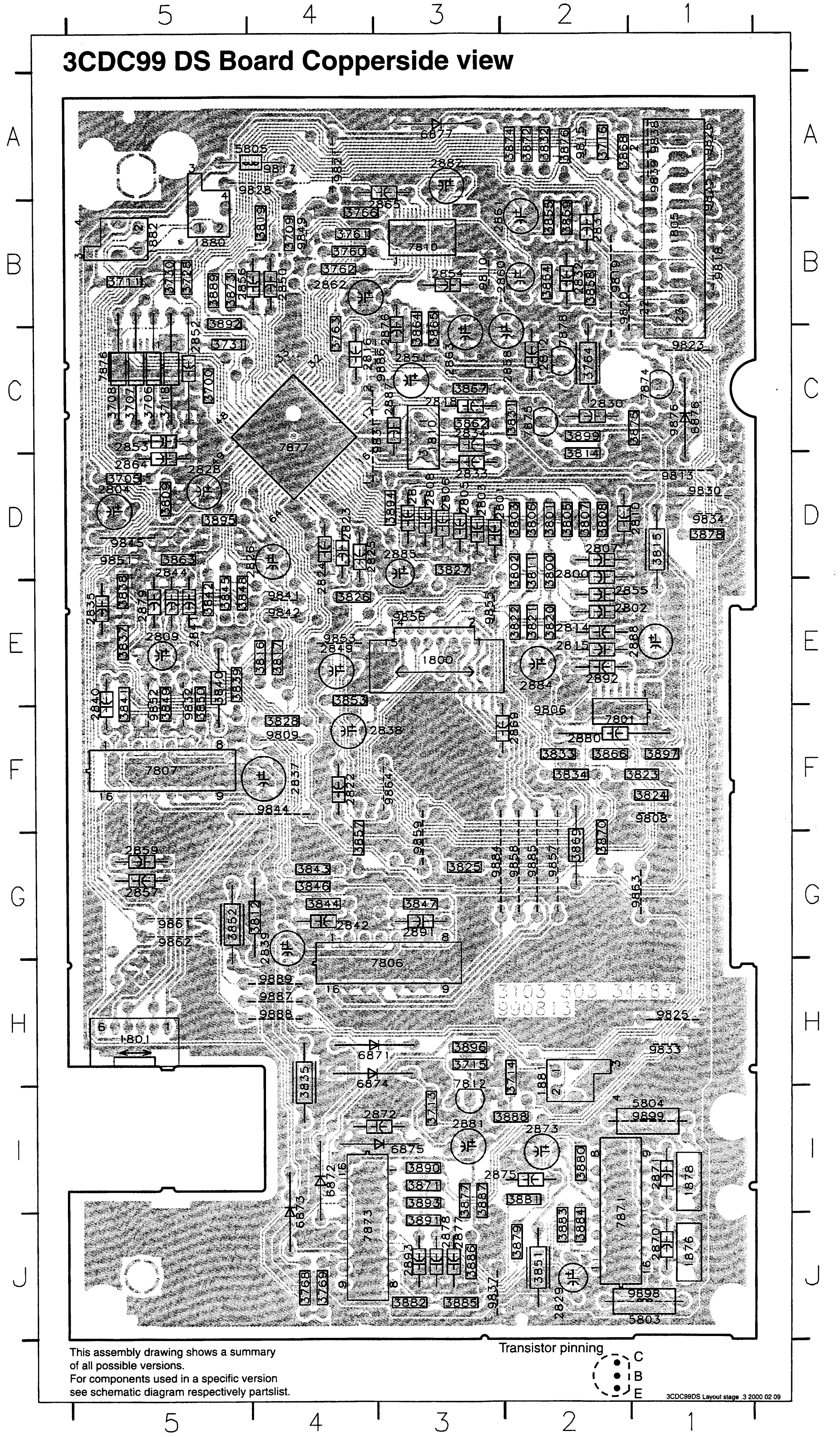
This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

Transistor pinning

Mapping

1800	E3
1801	H5
1805	A1
1810	D3
1876	J1
1878	I1
1880	A5
1881	I2
1882	B5
2800	D2
2801	D3
2802	E2
2803	D3
2804	D5
2805	D3
2806	D3
2807	D2
2808	D3
2809	E5
2810	D2
2811	D3
2812	C2
2814	E2
2815	E1
2816	C4
2818	C3
2822	F4
2823	D4
2824	D4
2825	D4
2826	D4
2828	D5
2829	J2
2830	C2
2831	B2
2832	B2
2833	D2
2834	C2
2835	E5
2837	F4
2838	F4
2839	H4
2840	E5
2841	E5
2842	G4
2844	E5
2849	E4
2850	B4
2851	C3
2852	C5
2853	C5
2854	B3
2855	E2
2856	C4
2857	G5
2858	C3
2859	G5
2860	B3
2861	A2
2862	B4
2863	C3
2864	D5
2865	A3
2869	F2
2870	J1
2871	I1
2872	I4
2873	I2
2875	I3
2876	B3
2877	J3
2878	J3
2879	E5
2880	F2
2881	I3
2882	A3
2884	E2
2885	E3
2887	C4
2888	E1
2891	G3
2892	E2
2893	J3
3700	C5
3705	D5
3706	C5
3707	C5
3708	C5
3709	B4
3711	B5
3713	I3
3714	H2
3715	H3
3716	A2
3718	C5
3728	B5
3730	B5
3731	C5
3760	B3
3761	B3
3762	B3
3763	C4
3764	C2
3766	B3
3768	J4
3769	J4
3800	D2
3801	D2
3802	D3
3803	D2
3805	D2
3806	D2
3807	D2
3808	D2
3809	D5
3811	D2
3812	G4
3814	D2
3815	D1
3816	E5
3817	E4
3819	B5
3820	E2
3821	E2
3822	E3
3823	F1
3824	F1
3825	G3
3826	E4
3827	E3
3828	F4
3831	C2
3832	A2
3833	F2
3834	F2
3835	H4
3837	E5
3838	D5
3839	E5
3840	E5
3841	E5
3842	E5
3843	G4
3844	G4
3845	E5
3846	G4
3847	G3
3848	E5
3849	E5
3850	E5
3851	J2
3852	G5
3853	F4
3854	B2
3855	B2
3857	G4
3858	B2
3859	A2
3862	C3
3863	D5
3864	B3
3865	C3
3866	F2
3867	C3
3868	B2
3869	G2
3870	G2
3871	I3
3872	A2
3873	B5
3874	A3
3875	C1
3876	A2
3877	I3
3878	D1
3879	J3
3880	I2
3881	I2
3882	J3
3883	J2
3884	I2
3885	J3
3886	J3
3887	I3
3888	I3
3889	B5
3890	I3
3891	I3
3892	C4
3893	I3
3894	D4
3895	D5
3896	H3
3897	F1
3899	C2
5803	J1
5804	I1
5805	A5
6871	H4
6872	I4
6873	I4
6874	H4
6875	I4
6876	C1
6877	A3
7801	F2
7806	H3
7807	F5
7810	B3
7812	H3
7871	I1
7873	J4
7874	C1
7875	C2
7876	C5
7877	C4
7878	C2
9805	C1
9806	E2
9807	G5
9808	F1
9809	F4
9810	B3
9813	D1
9815	A2
9817	A5
9818	B1
9819	B2
9820	B2
9821	A4
9823	C1
9825	H1
9826	A1
9828	A5
9830	D1
9831	C4
9832	E5
9833	H1
9834	D1
9835	A1
9836	D5
9837	J3
9838	A1
9839	A1
9841	E4
9842	E4
9844	F4
9845	D5
9849	A4
9851	D5
9852	E5
9853	E4
9855	E3
9856	E3
9857	G2
9858	G3
9859	G3
9861	G5
9862	G5
9863	G2
9864	F3
9876	C1
9884	G3
9885	G2
9886	C3
9887	H4
9888	H4
9889	H4
9898	J1
9899	I1

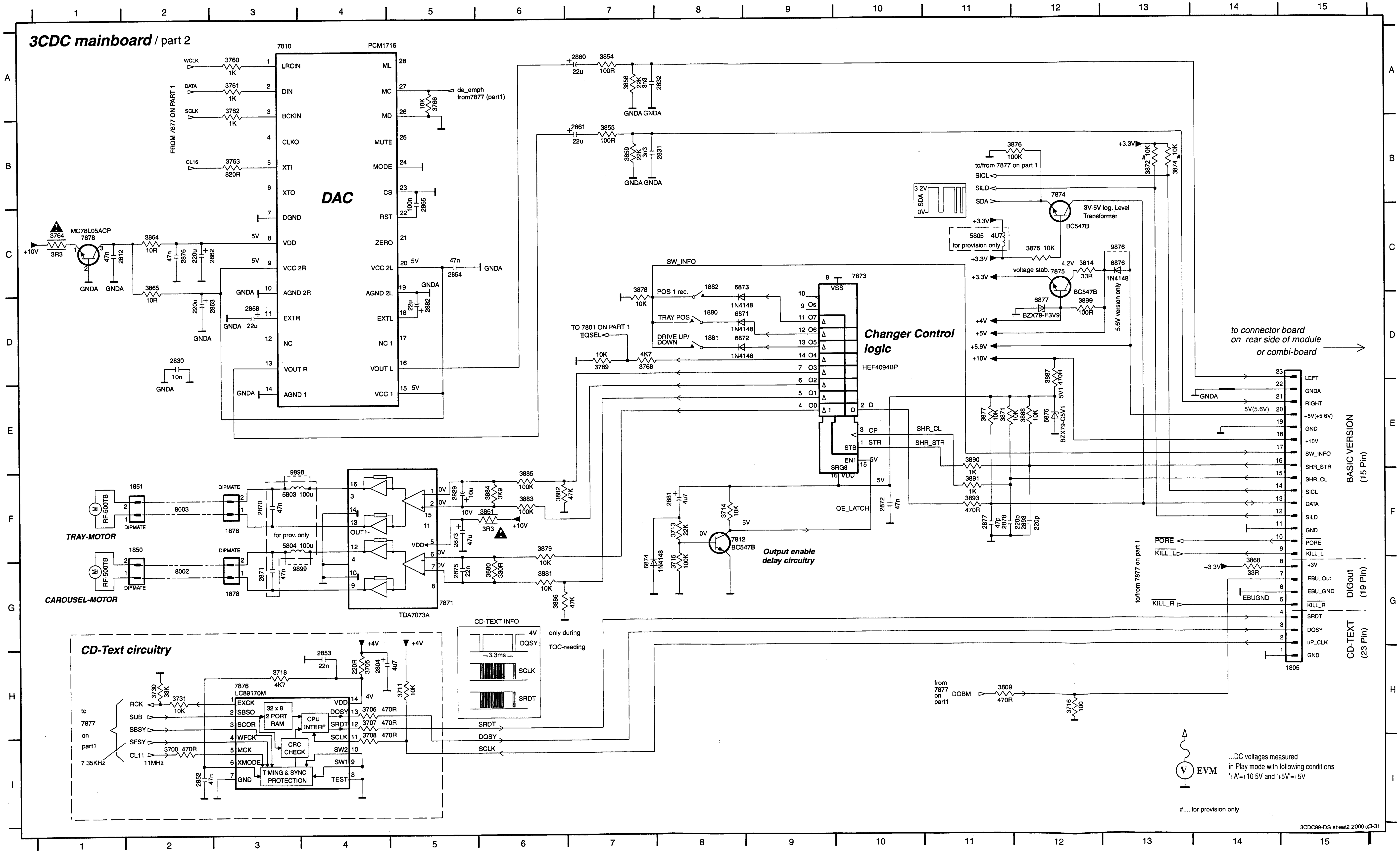
3CDC99 DS Board Copperside view



This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

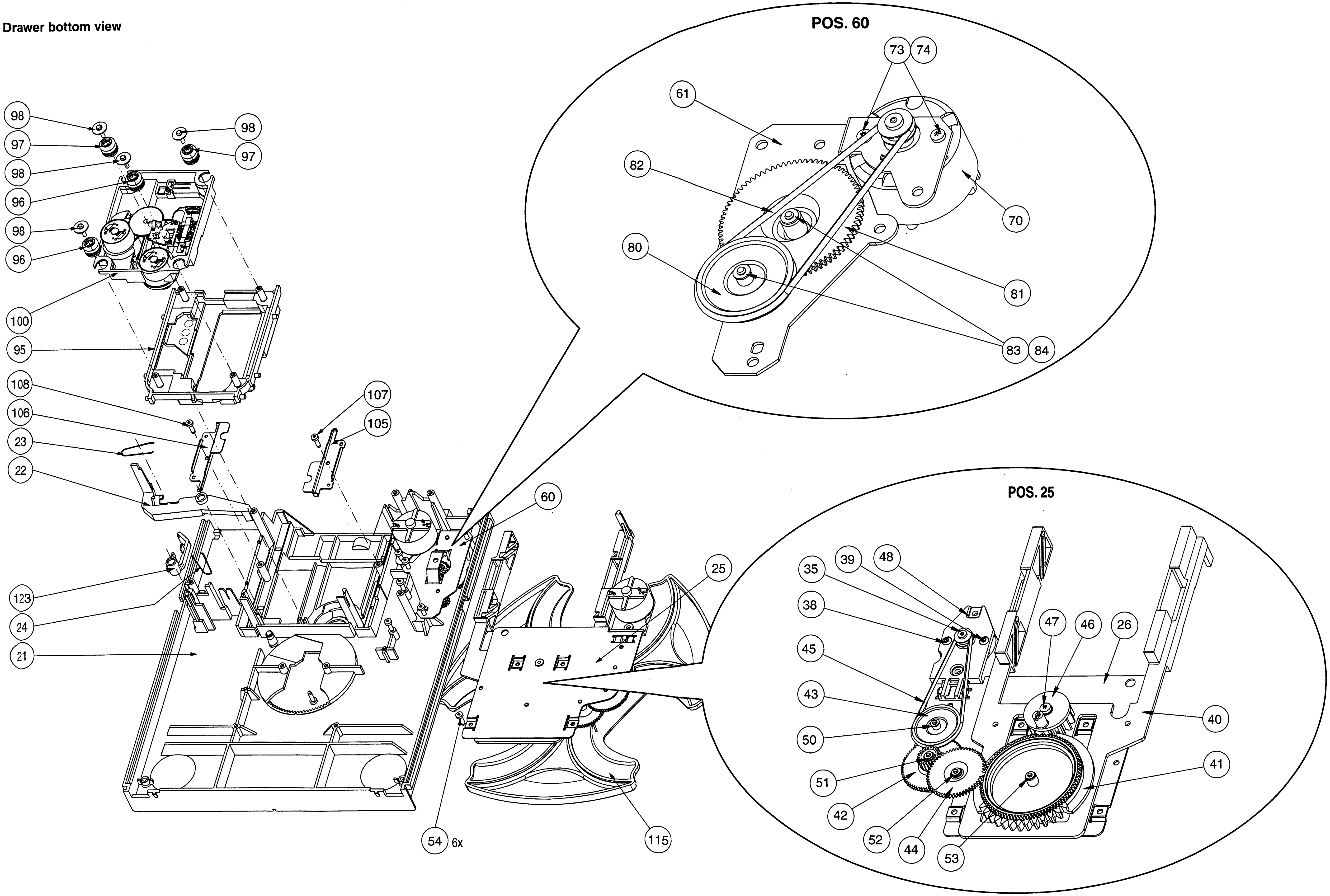
Transistor pinning

1805 H15	2804 H4	2852 I2	2862 C2	2872 F10	2881 F8	3707 H4	3716 H12	3762 A3	3809 H11	3859 B7	3874 B13	3880 G6	3886 G6	3896 G10	6872 D8	7810 A3	7876 H3	9839 C14
1876 F3	2812 C1	2853 H4	2863 D2	2873 F5	2882 D5	3708 H4	3718 H3	3763 B3	3814 C12	3864 C2	3875 C12	3881 G6	3887 D12	3899 D12	6873 C8	7812 F8	7878 C1	9876 C13
1878 G3	2829 F5	2854 C5	2864 H12	2875 G5	2893 F12	3711 H5	3730 H2	3764 C1	3851 F6	3865 C2	3876 B12	3882 F6	3888 E12	5803 F3	6874 G7	7871 G5	9826 H14	9898 E3
1880 D8	2830 D2	2858 D3	2865 B5	2876 C2	3700 I2	3713 F8	3731 H2	3766 A5	3854 A7	3868 G14	3877 E11	3883 F6	3890 E11	5804 F3	6875 E12	7873 C10	9834 F10	9899 G3
1881 D8	2831 B8	2860 A7	2870 F3	2877 F11	3705 H4	3714 F8	3760 A3	3768 D7	3855 B7	3871 E11	3878 C7	3884 F6	3891 F11	5805 C11	6876 C13	7874 B12	9835 G11	
1882 C8	2832 A8	2861 B7	2871 G3	2878 F11	3706 H4	3715 G8	3761 A3	3769 D7	3858 A7	3872 B13	3879 F6	3885 E6	3893 F11	6871 D8	6877 D12	7875 C12	9838 C14	


3CDC mainboard / part 2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I
7810
PCM1716
DAC
LRCIN
DIN
BCKIN
CLKO
XTI
XTO
DGND
VDD
VCC 2R
AGND 2R
EXTR
NC
VOUT R
AGND 1
ML
MC
MD
MUTE
MODE
CS
RST
ZERO
VCC 2L
AGND 2L
EXTL
NC 1
VOUT L
VCC 1
WCLK
DATA
SCLK
CL16
FROM 7877 ON PART 1
3760 1K
3761 1K
3762 1K
3763 820R
de_emph from7877 (part1)
10K 3766
MC78L05ACP
3764 3R3
7878
+10V
3864 10R
3865 10R
2812 47n
2876 47n
2862 220u
2863 220u
2830 10n
2858 22u
2854 47n
2865 100n
2882 22u
GNDA
5V
2860 22u
3854 100R
3858 22K
3853 3n3
2832
2861 22u
3855 100R
3859 22K
3863 3n3
2831
GNDA GNDA
SW_INFO
3878 10K
POS 1 rec.
1882
6873 1N4148
TRAY POS
1880
6871 1N4148
DRIVE UP/ DOWN
1881
6872 1N4148
TO 7801 ON PART 1 EQSEL
10K 3769
4K7 3768
7873
VSS
Changer Control logic
HEF4094BP
SRG8
STB
EN1
VDD
2 D
3 CP
1 STR
SHR_CL
SHR_STR
OE_LATCH
10 Os
9 Os
11 O7
12 O6
13 O5
14 O4
7 O3
6 O2
5 O1
4 O0
3876 100K
to/from 7877 on part 1
SICL
SILD
SDA
3.2V SDA 0V
7874 BC547B
3V-5V log. Level Transformer
+3.3V
5805 4U7
for provision only
3875 10K
3814 33R
4.2V
voltage stab. 7875
BC547B
6877 BZX79-F3V9
3899 100R
9876
6876 1N4148
5.6V version only
+4V
+5V
+5.6V
+10V
3872 10K #
3874 10K #
3887 470R
5V1
6875 BZX79-C5V1
3877 10K
3871 10K
3888 10K
3890 1K
3891 1K
3893 470R
2877 47p
2878 220p
2893 220p
2880 220p
2881 4u7
3713 22K
3714 10K
5V
0V
7812 BC547B
6874 1N4148
3715 100K
Output enable delay circuitry
2872 47n
to connector board on rear side of module or combi-board
LEFT
GNDA
RIGHT
+5V(+5 6V)
5V(5.6V)
GND
+10V
SW_INFO
SHR_STR
SHR_CL
SICL
DATA
SILD
GND
PORE
KILL_L
+3V
EBU_Out
EBU_GND
EBUGND
KILL_R
SRDT
DQSY
uP_CLK
GND
1805
BASIC VERSION (15 Pin)
DIGout (19 Pin)
CD-TEXT (23 Pin)
to/from 7877 on part 1
+3 3V
3868 33R
TRAY-MOTOR
CAROUSEL-MOTOR
RF-500TB
1851
1850
DIPMATE
8003
8002
1876
1878
2870 47n
2871 47n
9898
5803 100u
5804 100u
9899
for prov. only
TDA7073A
7871
OUT1-
VDD
2829 10u
3884 3K9
3885 100K
3883 100K
3851 3R3
2873 47u
+10V
3882 47K
2875 22n
3880 330R
3879 10K
3881 10K
3886 47K
0V
10V
CD-TEXT INFO
4V
DQSY
3.3ms
SCLK
SRDT
only during TOC-reading
CD-Text circuitry
to 7877 on part1
RCK
SUB
SBSY
SFSY
CL11
7 35KHz
11MHz
3730 33K
3731 10K
3700 470R
3718 4K7
2853 22n
7876 LC89170M
EXCK
SBSO
SCOR
WFCK
MCK
XMODE
GND
32 x 8 2 PORT RAM
CPU INTERF
CRC CHECK
TIMING & SYNC PROTECTION
VDD
DQSY
SRDT
SCLK
SW2
SW1
TEST
+4V
3705 220R
2804 4u7
3711 10K
3706 470R
3707 470R
3708 470R
2852 47n
from 7877 on part1
DOBM
3809 470R
3716 100
EVM
...DC voltages measured in Play mode with following conditions '+A'=+10 5V and '+5V'=+5V
#.... for provision only
3CDC99-DS sheet2 2000-03-31

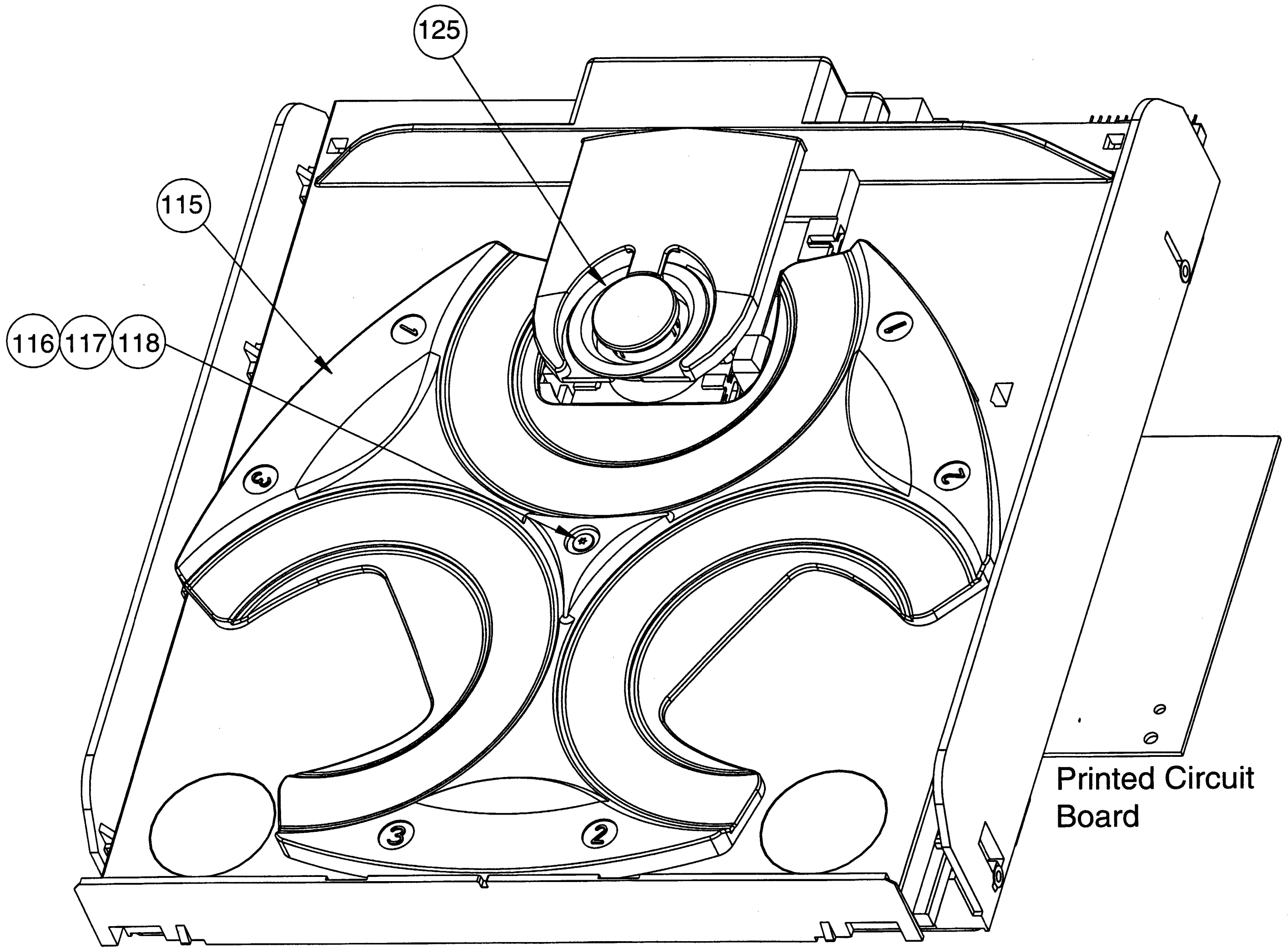
EXPLODED VIEW / *3CDC99-DS*

Drawer bottom view


POS. 60
73
74
61
82
80
70
81
83
84
98
97
98
96
98
96
98
97
100
95
108
106
23
22
107
105
60
123
24
21
25
54
6x
115
POS. 25
35
39
48
38
45
43
50
51
42
52
44
53
47
46
26
40
41

EXPLODED VIEW / *3CDC99-DS*

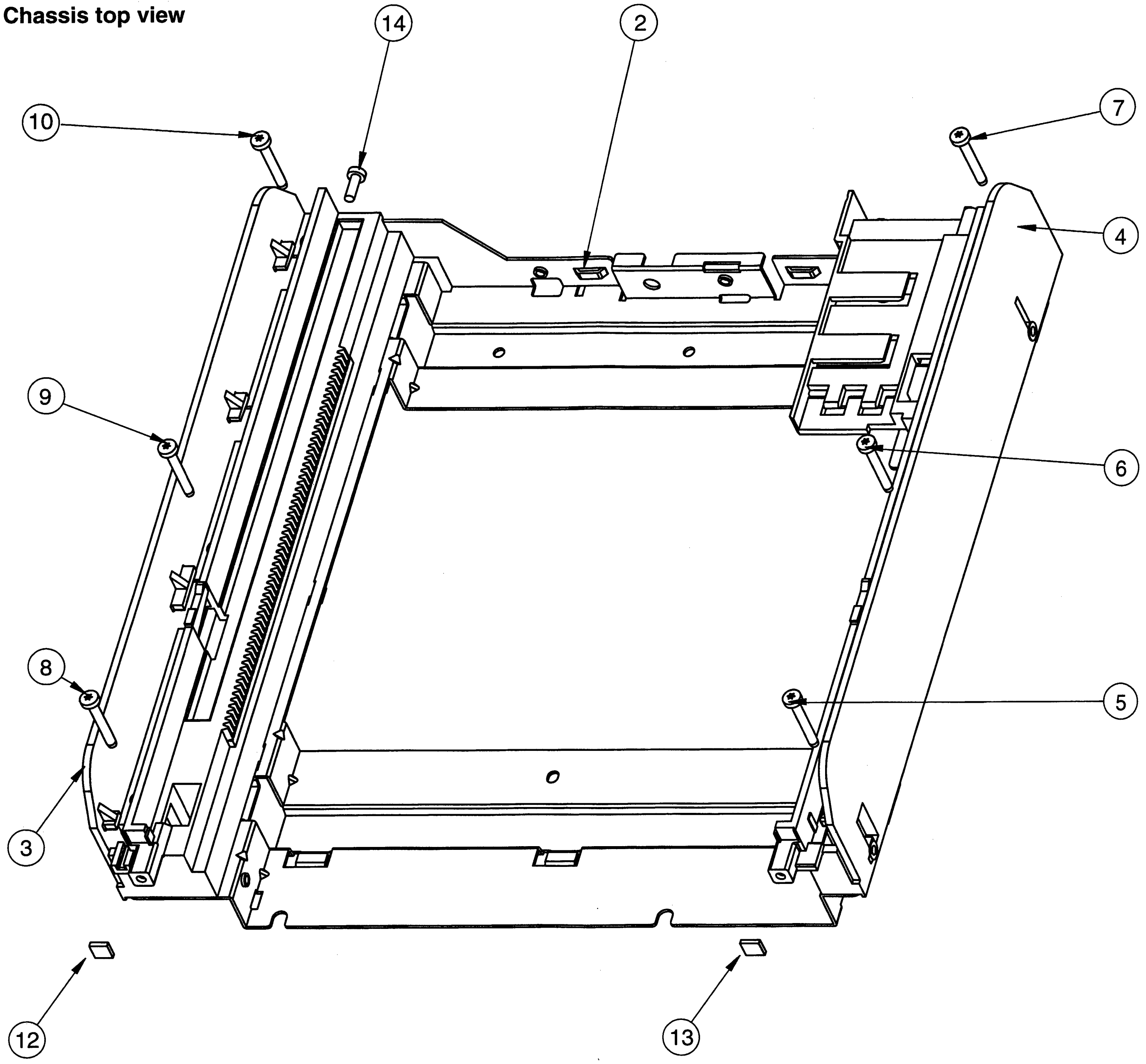
Module top view



MECHANICAL PARTSLIST 3CDC99-DS MODULE

0003	4822 463 11235	GUIDING LEFT
0004	4822 463 11236	GUIDING RIGHT
0012	4822 466 12146	RUBBER
0013	4822 466 12146	RUBBER
0021	4822 418 10403	DRAWER
0022	4822 402 11236	BRACKET TUMBLER
0023	4822 492 11721	SPRING
0024	4822 492 11721	SPRING
0038	4822 502 12548	SCREW M2,6x3,5
0039	4822 502 12548	SCREW M2,6X3,5
0040	4822 463 11237	SLIDE
0041	4822 522 10509	CONTROL DISC
0042	4822 522 10492	GEAR WHEEL
0043	4822 528 10937	PULLEY
0044	4822 522 10493	IDLER WHEEL
0045	4822 358 10115	BELT
0046	4822 466 10735	ECCENTRIC GEAR WHEEL
0050	4822 532 12364	WASHER
0051	4822 532 12364	WASHER
0052	4822 532 12364	WASHER
0053	4822 532 12364	WASHER
0073	4822 502 12548	SCREW M2,6X3,5
0074	4822 502 12548	SCREW M2,6X3,5
0080	4822 528 10937	PULLEY
0081	4822 522 10494	GEAR DRAWER
0082	4822 358 10115	BELT
0083	4822 532 12364	WASHER
0084	4822 532 12364	WASHER
0095	4822 404 10985	SUPPORT-VAM
0096	4822 529 10387	RUBBER DAMPER CD DRIVE, FRONT
0097	4822 529 10387	RUBBER DAMPER CD DRIVE, FRONT
0100	9305 022 30201	VAM2202/01
0115	4822 466 10736	CAROUSEL
0117	4822 532 12365	BUSH DRAWER
0123	4822 402 11237	SWITCH-BRACKET
0125	4822 401 11708	DISC CLAMP VAM DRIVE 3CDC

Chassis top view



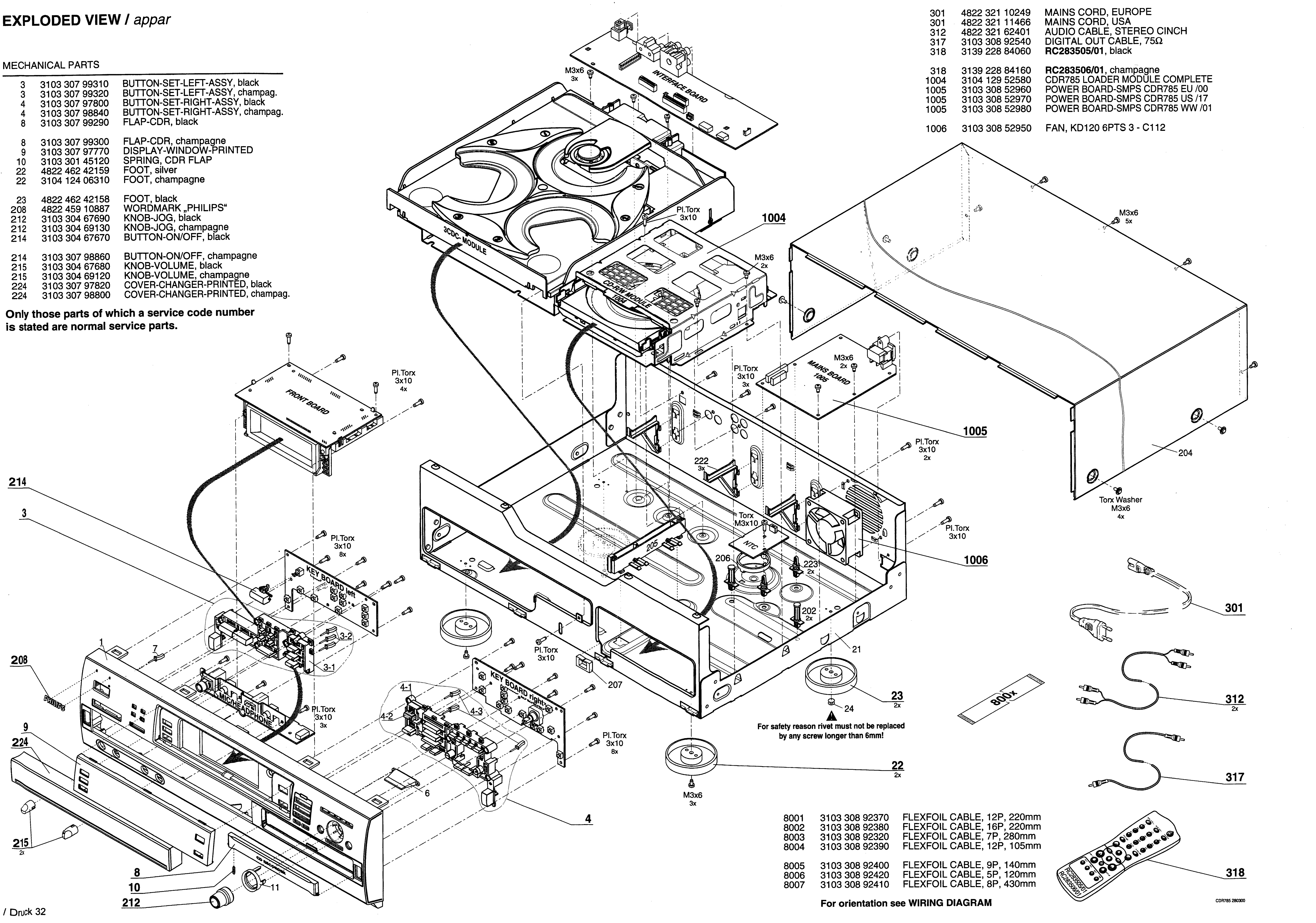
EXPLODED VIEW / *appar*

MECHANICAL PARTS

3	3103 307 99310	BUTTON-SET-LEFT-ASSY, black
3	3103 307 99320	BUTTON-SET-LEFT-ASSY, champag.
4	3103 307 97800	BUTTON-SET-RIGHT-ASSY, black
4	3103 307 98840	BUTTON-SET-RIGHT-ASSY, champag.
8	3103 307 99290	FLAP-CDR, black
8	3103 307 99300	FLAP-CDR, champagne
9	3103 307 97770	DISPLAY-WINDOW-PRINTED
10	3103 301 45120	SPRING, CDR FLAP
22	4822 462 42159	FOOT, silver
22	3104 124 06310	FOOT, champagne
23	4822 462 42158	FOOT, black
208	4822 459 10887	WORDMARK „PHILIPS“
212	3103 304 67690	KNOB-JOG, black
212	3103 304 69130	KNOB-JOG, champagne
214	3103 304 67670	BUTTON-ON/OFF, black
214	3103 307 98860	BUTTON-ON/OFF, champagne
215	3103 304 67680	KNOB-VOLUME, black
215	3103 304 69120	KNOB-VOLUME, champagne
224	3103 307 97820	COVER-CHANGER-PRINTED, black
224	3103 307 98800	COVER-CHANGER-PRINTED, champag.

Only those parts of which a service code number is stated are normal service parts.

301	4822 321 10249	MAINS CORD, EUROPE
301	4822 321 11466	MAINS CORD, USA
312	4822 321 62401	AUDIO CABLE, STEREO CINCH
317	3103 308 92540	DIGITAL OUT CABLE, 75Ω
318	3139 228 84060	**RC283505/01**, black
318	3139 228 84160	**RC283506/01**, champagne
1004	3104 129 52580	CDR785 LOADER MODULE COMPLETE
1005	3103 308 52960	POWER BOARD-SMPS CDR785 EU /00
1005	3103 308 52970	POWER BOARD-SMPS CDR785 US /17
1005	3103 308 52980	POWER BOARD-SMPS CDR785 WW /01
1006	3103 308 52950	FAN, KD120 6PTS 3 - C112


INTERFACE BOARD
M3x6
3x
3CDC- MODULE
CD-RW MODULE
1004
Pl.Torx
3x10
1004
M3x6
2x
M3x6
5x
FRONT BOARD
Pl.Torx
3x10
4x
M3x6
2x
MAINS BOARD
1005
Pl.Torx
3x10
3x
1005
Pl.Torx
3x10
2x
204
Torx Washer
M3x6
4x
222
3x
Torx
M3x10
NTC
205
206
223
2x
Pl.Torx
3x10
1006
214
3
Pl.Torx
3x10
8x
KEY BOARD left
3-2
3-1
208
PHILIPS
1
7
MIC/HEADPHONE
Pl.Torx
3x10
3x
9
224
215
2x
8
10
212
11
6
4-1
4-2
4-3
4
KEY BOARD right
Pl.Torx
3x10
207
Pl.Torx
3x10
8x
202
2x
21
23
2x
24
22
2x
M3x6
3x
800x
301
312
2x
317
318
RC283505/01
RC283506/01
CDR785 280300

For safety reason rivet must not be replaced by any screw longer than 6mm!

8001	3103 308 92370	FLEXFOIL CABLE, 12P, 220mm
8002	3103 308 92380	FLEXFOIL CABLE, 16P, 220mm
8003	3103 308 92320	FLEXFOIL CABLE, 7P, 280mm
8004	3103 308 92390	FLEXFOIL CABLE, 12P, 105mm
8005	3103 308 92400	FLEXFOIL CABLE, 9P, 140mm
8006	3103 308 92420	FLEXFOIL CABLE, 5P, 120mm
8007	3103 308 92410	FLEXFOIL CABLE, 8P, 430mm

For orientation see WIRING DIAGRAM

ELECTRICAL PARTSLIST *FRONT BOARD*

MISCELLANEOUS

1400	4822 267 51453	FFC-CONNECTOR, 12P, SIDE ENTRY
1401	2422 025 14546	FFC-CONNECTOR, 16P, SIDE ENTRY
1402	4822 265 11531	FFC-CONNECTOR, 9P, SIDE ENTRY
1403	4822 267 10956	FFC-CONNECTOR, 7P, SIDE ENTRY
1405	4822 267 51453	FFC-CONNECTOR, 12P, SIDE ENTRY
7404	3103 308 52920	VFD DISPLAY, 15-BT-66GN
7415	4822 218 11573	GP1U28QP, IR-EYE

CAPACITORS

2400©	5322 122 32531	100pF	5%	50V
2401©	5322 122 32531	100pF	5%	50V
2402©	5322 122 32531	100pF	5%	50V
2403©	5322 122 32531	100pF	5%	50V
2404©	5322 122 32531	100pF	5%	50V
2405©	5322 122 32531	100pF	5%	50V
2406©	5322 122 32531	100pF	5%	50V
2407©	5322 122 32531	100pF	5%	50V
2408©	5322 122 32531	100pF	5%	50V
2411©	5322 122 32448	10pF	5%	50V
2412©	5322 122 32448	10pF	5%	50V
2414©	5322 122 31863	330pF	5%	50V
2416©	5322 122 31863	330pF	5%	50V
2417©	4822 126 13838	100nF	10%	50V
2427©	4822 126 13486	15pF	2%	63V
2428©	4822 126 13486	15pF	2%	63V
2431©	4822 126 14585	100nF	10%	50V
2432	4822 124 40433	47µF	20%	25V
2434	4822 124 41584	100µF	20%	10V
2435	4822 124 41751	47µF	20%	16V
2438©	4822 122 33177	10nF	20%	50V
2439	4822 124 40769	4,7µF	20%	100V
2440©	4822 126 14585	100nF	10%	50V
2441©	4822 122 33127	2,2nF	10%	63V
2442©	4822 122 33177	10nF	20%	50V
2443	4822 124 41751	47µF	20%	16V

RESISTORS

3402©	4822 051 20471	470Ω	5%	0,1W
3404©	4822 051 20223	22kΩ	5%	0,1W
3405©	4822 051 20223	22kΩ	5%	0,1W
3406©	4822 051 20223	22kΩ	5%	0,1W
3411	4822 052 10228	2,2Ω	5%	0,33W
3425©	4822 051 10102	1kΩ	2%	0,25W
3427	4822 052 10478	4,7Ω	5%	NFR
3428	4822 116 52263	2,7kΩ	5%	0,5W
3441©	4822 051 10102	1kΩ	2%	0,25W
3443	4822 050 11002	1kΩ	5%	0,2W
3449©	4822 051 10102	1kΩ	2%	0,25W
3451©	4822 117 12955	2,7kΩ	1%	0,1W
3452©	4822 051 10102	1kΩ	2%	0,25W
3454©	4822 051 20471	470Ω	5%	0,1W
3460©	4822 051 20471	470Ω	5%	0,1W
3464©	4822 051 20471	470Ω	5%	0,1W
3466©	4822 051 20471	470Ω	5%	0,1W
3468©	4822 051 20471	470Ω	5%	0,1W
3470©	4822 051 20332	3,3kΩ	5%	0,1W
3475©	4822 051 10102	1kΩ	2%	0,25W
3476©	4822 051 20101	100Ω	5%	0,1W
3479©	4822 051 20101	100Ω	5%	0,1W
3480©	4822 051 10102	1kΩ	2%	0,25W
3482©	4822 051 20101	100Ω	5%	0,1W
3483©	4822 051 10102	1kΩ	2%	0,25W
3485©	4822 051 10102	1kΩ	2%	0,25W
3486©	4822 051 20471	470Ω	5%	0,1W
3487©	4822 051 10102	1kΩ	2%	0,25W
3488©	4822 051 10102	1kΩ	2%	0,25W
3489©	4822 051 20471	470Ω	5%	0,1W

RESISTORS

3491	4822 050 11002	1kΩ	5%	0,2W
3492©	4822 051 10102	1kΩ	2%	0,25W
3493©	4822 051 10102	1kΩ	2%	0,25W
3494©	4822 051 10102	1kΩ	2%	0,25W
3495©	4822 051 10102	1kΩ	2%	0,25W
3497©	4822 051 10102	1kΩ	2%	0,25W
3498©	4822 051 10102	1kΩ	2%	0,25W
3499©	4822 051 10102	1kΩ	2%	0,25W
3500©	4822 051 10102	1kΩ	2%	0,25W
3501©	4822 051 10102	1kΩ	2%	0,25W
3502©	4822 051 20471	470Ω	5%	0,1W
3503©	4822 051 10102	1kΩ	2%	0,25W
3504©	4822 051 10102	1kΩ	2%	0,25W
3505©	4822 051 10102	1kΩ	2%	0,25W
3506©	4822 051 20471	470Ω	5%	0,1W
3507©	4822 051 10102	1kΩ	2%	0,25W
3508©	4822 051 10102	1kΩ	2%	0,25W
3509©	4822 051 20471	470Ω	5%	0,1W
3510	4822 116 83876	270Ω	5%	0.16W
3511	4822 116 83876	270Ω	5%	0.16W
3512	4822 116 83876	270Ω	5%	0.16W
3516	4822 116 83876	270Ω	5%	0.16W
3518	4822 116 83876	270Ω	5%	0.16W
3519	4822 052 10228	2,2Ω	5%	0,33W
3520©	4822 051 20101	100Ω	5%	0,1W
3523©	4822 051 10102	1kΩ	2%	0,25W
3524©	4822 117 11504	270Ω	1%	0.1W
3526©	4822 117 10833	10kΩ	1%	0,1W
3527©	4822 117 11504	270Ω	1%	0.1W
3528©	4822 051 10102	1kΩ	2%	0,25W
3529©	4822 117 11504	270Ω	1%	0.1W
3530©	4822 117 10833	10kΩ	1%	0,1W
3531©	4822 117 10837	100kΩ	1%	0,1W
3533©	4822 117 10833	10kΩ	1%	0,1W
3534	4822 052 10479	47Ω	5%	0,3W
3535©	4822 051 20471	470Ω	5%	0,1W
3537	4822 050 21003	10kΩ	2%	0,25W
3539©	4822 051 10102	1kΩ	2%	0,25W
3540	4822 116 52263	2,7kΩ	5%	0,5W
3545©	4822 117 13579	220kΩ	1%	0.1W

4401©	4822 051 20008CHIP JUMPER 0805
4403©	4822 051 20008CHIP JUMPER 0805
4404©	4822 051 20008CHIP JUMPER 0805
4405©	4822 051 20008CHIP JUMPER 0805

COILS

1406	5322 242 73686	CERAMIC RESONATOR, 12MHZ
5407	4822 157 62552	2,2µH

DIODES

6403	3198 010 53380	BZX79-B3V3
6404	4822 130 30621	1N4148
6415	4822 130 30621	1N4148
6416	4822 130 30621	1N4148

TRANSISTORS

7405©	4822 130 60511	BC847B
7406©	4822 130 60511	BC847B
7407©	4822 130 60511	BC847B
7408©	4822 130 60511	BC847B
7409©	4822 130 60511	BC847B
7414©	4822 130 60511	BC847B

INTEGRATED CIRCUITS

7412©	3103 308 84170	TMP88CU77F-CDR785.1, µ-PROC.

ELECTRICAL PARTSLIST *KEY BOARD left*

MISCELLANEOUS

1460	4822 276 13775	TACT SWITCH
1461	4822 276 13775	TACT SWITCH
1462	4822 276 13775	TACT SWITCH
1463	4822 276 13775	TACT SWITCH
1464	4822 276 13775	TACT SWITCH
1465	4822 276 13775	TACT SWITCH
1466	4822 276 13775	TACT SWITCH
1467	4822 276 13775	TACT SWITCH
1468	4822 276 13775	TACT SWITCH
1469	4822 276 13775	TACT SWITCH
1470	4822 276 13775	TACT SWITCH
1480	4822 265 11531	FFC-CONNECTOR, 9P, SIDE ENTRY
1481	2422 128 02929	SWITCH, PUSH

CAPACITORS

2490©	5322 122 32531	100pF	5%	50V

RESISTORS

3589©	4822 051 10102	1kΩ	2%	0,25W
3590	4822 116 83868	150Ω	5%	0,5W
3591	4822 116 83872	220Ω	5%	0,5W
3592©	4822 117 11504	270Ω	1%	0.1W
3593©	4822 051 20391	390Ω	5%	0,1W
3594©	4822 051 20561	560Ω	5%	0,1W
3595©	4822 117 11454	820Ω	1%	
3596	4822 116 52207	1,2kΩ	5%	0,5W
3597©	4822 051 20182	1,8kΩ	5%	0,1W
3598©	4822 051 20392	3,9kΩ	5%	0,1W
3599©	4822 117 10833	10kΩ	1%	0,1W

DIODES

6426©	9322 147 84685	LGT770-LM, GREEN
6427©	9322 147 84685	LGT770-LM, GREEN
6428©	9322 147 84685	LGT770-LM, GREEN
6429©	9322 147 85685	LST770-KL, RED
6430	4822 130 30621	1N4148
6431	4822 130 30621	1N4148
6432	4822 130 30621	1N4148
6433	4822 130 30621	1N4148

ELECTRICAL PARTSLIST *KEY BOARD right*

MISCELLANEOUS

1430	4822 267 51453	FFC-CONNECTOR, 12P, SIDE ENTRY
1440	4822 276 13775	TACT SWITCH
1441	4822 276 13775	TACT SWITCH
1442	4822 276 13775	TACT SWITCH
1443	4822 276 13775	TACT SWITCH
1444	4822 276 13775	TACT SWITCH
1445	4822 276 13775	TACT SWITCH
1446	4822 276 13775	TACT SWITCH
1447	4822 276 13775	TACT SWITCH
1448	4822 276 13775	TACT SWITCH
1449	4822 276 13775	TACT SWITCH
1450	4822 276 13775	TACT SWITCH
1451	4822 276 13775	TACT SWITCH
1452	4822 276 13775	TACT SWITCH
1453	4822 276 13775	TACT SWITCH
1454	4822 276 13775	TACT SWITCH
1455	4822 276 13775	TACT SWITCH
1456	4822 276 13775	TACT SWITCH
1457	8203 303 84420	JOG ENCODER

CAPACITORS

2480©	5322 122 32531	100pF	5%	50V
2481©	5322 122 32531	100pF	5%	50V
2482©	4822 122 33177	10nF	20%	50V
2483©	4822 122 33177	10nF	20%	50V

RESISTORS

3611©	4822 117 11503	220Ω	5%	0,1W
3612©	4822 117 11503	220Ω	5%	0,1W
3613©	4822 117 11503	220Ω	5%	0,1W
3614©	4822 117 10353	150Ω	5%	0,1W
3615©	4822 117 10353	150Ω	5%	0,1W
3618©	4822 117 10353	150Ω	5%	0,1W
3619©	4822 117 11503	220Ω	5%	0,1W
3620©	4822 117 11504	270Ω	1%	0.1W
3621©	4822 051 20391	390Ω	5%	0,1W
3622©	4822 051 20561	560Ω	5%	0,1W
3623©	4822 117 11454	820Ω	1%	
3624©	4822 051 20122	1,2kΩ	5%	0,1W
3625©	4822 051 20182	1,8kΩ	5%	0,1W
3626©	4822 051 20392	3,9kΩ	5%	0,1W
3628©	4822 117 10353	150Ω	5%	0,1W
3629©	4822 117 11503	220Ω	5%	0,1W
3630©	4822 117 11504	270Ω	1%	0.1W
3631©	4822 051 20391	390Ω	5%	0,1W
3632	4822 116 83883	470Ω	5%	0,16W
3633	4822 116 83883	470Ω	5%	0,16W
3634©	4822 117 10833	10kΩ	1%	0,1W
3635©	4822 117 10833	10kΩ	1%	0,1W
3636	4822 116 52231	820Ω	5%	0,5W
3637	4822 116 52226	560Ω	5%	0,5W

DIODES

6417	4822 130 30621	1N4148
6418	4822 130 30621	1N4148
6419	4822 130 30621	1N4148
6420©	9322 147 85685	LST770-KL, RED
6421©	9322 147 84685	LGT770-LM, GREEN
6422©	9322 147 85685	LST770-KL, RED
6423©	9322 147 83685	LBT776-K1L1, BLUE
6424©	9322 147 83685	LBT776-K1L1, BLUE
6425©	9322 147 85685	LST770-KL, RED
6435©	9322 147 85685	LST770-KL, RED
6436©	9322 147 85685	LST770-KL, RED

ELECTRICAL PARTSLIST *HEADPHONE BOARD*

MISCELLANEOUS

1491	4822 267 31453	HEADPHONE SOCKET 6,3mm
1492	4822 267 31453	MICROPHONE SOCKET 6,3mm
1690	4822 265 11535	FFC-CONNECTOR, 8P, SIDE ENTRY

CAPACITORS

2661©	4822 122 33891	3,3nF	10%	63V
2662©	4822 122 33891	3,3nF	10%	63V
2663	4822 124 40433	47μF	20%	25V
2664	4822 124 40433	47μF	20%	25V
2665©	4822 122 33172	390pF	5%	50V
2666©	4822 122 33172	390pF	5%	50V
2667	4822 124 40433	47μF	20%	25V
2668	4822 124 40433	47μF	20%	25V
2671©	5322 122 34099	470pF	10%	63V
2672©	5322 122 34099	470pF	10%	63V
2673	4822 124 12032	4,7μF	20%	50V
2674	4822 124 12032	4,7μF	20%	50V
2680©	4822 126 14585	100nF	10%	50V
2681©	5322 122 31647	1nF	10%	63V
2682©	5322 122 31647	1nF	10%	63V
2683	4822 124 22652	2,2μF	20%	50V
2684	4822 124 22652	2,2μF	20%	50V
2685©	4822 122 33891	3,3nF	10%	63V
2686©	4822 122 33891	3,3nF	10%	63V
2687©	4822 122 33172	390pF	5%	50V
2688©	4822 122 33172	390pF	5%	50V
2689	4822 124 21913	1μF	20%	63V
2690	4822 124 21913	1μF	20%	63V
2695	4822 124 40433	47μF	20%	25V
2696	4822 124 81286	47μF	20%	16V
2697©	4822 126 14585	100nF	10%	50V

RESISTORS

3661	4822 101 21199	POTMETER 2x10KΩ		
3663©	4822 051 20229	22Ω	5%	0,1W
3664©	4822 051 20229	22Ω	5%	0,1W
3665©	4822 051 20101	100Ω	5%	0,1W
3666©	4822 051 20101	100Ω	5%	0,1W
3667©	4822 117 10833	10kΩ	1%	0,1W
3668©	4822 117 10833	10kΩ	1%	0,1W
3669	4822 052 10109	10Ω	5%	NFR
3670	4822 052 10688	6,8Ω	5%	0,33W
3671©	4822 051 20472	4,7kΩ	5%	0,1W
3672©	4822 051 20472	4,7kΩ	5%	0,1W
3673©	4822 117 10833	10kΩ	1%	0,1W
3674©	4822 117 10833	10kΩ	1%	0,1W
3675©	4822 051 10102	1kΩ	2%	0,25W
3676©	4822 051 10102	1kΩ	2%	0,25W
3677©	4822 051 10102	1kΩ	2%	0,25W
3678©	4822 051 10102	1kΩ	2%	0,25W
3681©	4822 117 10833	10kΩ	1%	0,1W
3682©	4822 117 10833	10kΩ	1%	0,1W
3683©	4822 051 20101	100Ω	5%	0,1W
3684©	4822 051 20101	100Ω	5%	0,1W
3685©	4822 117 11449	2,2kΩ	1%	0,1W
3686©	4822 117 11449	2,2kΩ	1%	0,1W
3687©	4822 051 20101	100Ω	5%	0,1W
3688©	4822 051 20101	100Ω	5%	0,1W
3689©	4822 117 10833	10kΩ	1%	0,1W
3690©	4822 117 10833	10kΩ	1%	0,1W
3695	4822 101 21199	POTMETER 2x10KΩ		
3696	4822 116 83883	470Ω	5%	0,16W
3697	4822 116 83883	470Ω	5%	0,16W

RESISTORS

4601©	4822 051 20008	CHIP JUMPER 0805
4603©	4822 051 20008	CHIP JUMPER 0805
4604©	4822 051 20008	CHIP JUMPER 0805
4605©	4822 051 20008	CHIP JUMPER 0805
4606©	4822 051 20008	CHIP JUMPER 0805

INTEGRATED CIRCUITS

7650©	4822 209 31378	NJM4556M, 2-FOLD OP-AMP.
7680©	4822 209 30095	LM833D, 2-FOLD OP-AMP.

ELECTRICAL PARTSLIST *INTERFACE BOARD*

MISCELLANEOUS

1301	4822 267 10732	FFC-CONNECTOR, 12P, TOP ENTRY
1302	2422 025 14526	FFC-CONNECTOR, 16P, TOP ENTRY
1303	4822 267 10757	FFC-CONNECTOR, 23P, TOP ENTRY
1304	4822 265 11535	FFC-CONNECTOR, 8P, SIDE ENTRY
1306	4822 267 10958	FFC-CONNECTOR, 5P, SIDE ENTRY
1311	4822 265 11151	CINCH SOCKET, 4-FOLD
1312	4822 267 31448	CINCH SOCKET, 2-FOLD
6304	4822 218 11487	OPTICAL CONNECTOR, GP1F32R

CAPACITORS

2238©	5322 122 32531	100pF	5%	50V
2301©	4822 126 14585	100nF	10%	50V
2302©	4822 126 14585	100nF	10%	50V
2303	4822 124 21913	1µF	20%	63V
2304©	4822 126 14585	100nF	10%	50V
2305©	4822 126 14585	100nF	10%.	50V
2307	4822 124 40433	47µF	20%	25V
2309©	4822 126 14585	100nF	10%	50V
2310©	5322 122 31647	1nF	10%	63V
2311©	4822 126 14585	100nF	10%	50V
2312©	4822 126 14585	100nF	10%	50V
2313©	5322 122 33538	150pF	5%	63V
2321©	4822 126 14585	100nF	10%	50V
2322©	4822 126 14585	100nF	10%	50V
2325©	4822 126 14585	100nF	10%	50V
2327©	4822 126 13838	100nF	10%	50V
2330©	4822 126 14585	100nF	10%	50V
2331	4822 124 40248	10µF	20%	63V
2332	4822 124 40248	10µF	20%	63V
2333	4822 121 42687	3,3nF	10%	63V
2334	4822 121 42687	3,3nF	10%	63V
2335©	4822 126 14585	100nF	10%	50V
2340	4822 124 41584	100µF	20%	10V
2350	4822 124 40207	100µF	20%	25V
2351	4822 124 40207	100µF	20%	25V
2352©	4822 126 14585	100nF	10%	50V
2353©	4822 126 14585	100nF	10%	50V
2354©	4822 126 14043	1µF	20%	16V
2355©	4822 126 14043	1µF	20%	16V
2361	4822 124 40248	10µF	20%	63V
2362	4822 124 40248	10µF	20%	63V
2365©	5322 122 31863	330pF	5%	50V
2366©	5322 122 31863	330pF	5%	50V
2367©	4822 126 14585	100nF	10%	50V
2368©	4822 126 14585	100nF	10%	50V
2371	4822 124 40248	10µF	20%	63V
2372	4822 124 40248	10µF	20%	63V
2373©	4822 126 14585	100nF	10%	50V
2375©	5322 122 34099	470pF	10%	63V
2376©	5322 122 34099	470pF	10%	63V
2377©	4822 122 33127	2,2nF	10%	63V
2378©	4822 122 33127	2,2nF	10%	63V
2379©	4822 126 14585	100nF	10%	50V
2380©	4822 126 14585	100nF	10%	50V
2385©	4822 126 14585	100nF	10%	50V
2386©	4822 126 14585	100nF	10%	50V
2388©	5322 122 32531	100pF	5%	50V
2390	4822 124 80791	470µF	20%	16V
2391	4822 124 80791	470µF	20%	16V
2392	4822 124 80791	470µF	20%	16V
2396©	5322 116 80853	560pF	5%	63V
2397©	4822 122 33575	220pF	5%	50V
2398©	4822 122 33575	220pF	5%	50V

CAPACITORS

2399©	5322 116 80853	560pF	5%	63V
2400	4822 124 40207	100µF	20%	25V
2401	4822 124 40207	100µF	20%	25V

RESISTORS

2374©	4822 117 10361	680Ω	1%	0,1W
3300©	4822 117 10833	10kΩ	1%	0,1W
3301©	4822 051 10102	1kΩ	2%	0,25W
3302©	4822 051 10102	1kΩ	2%	0,25W
3303©	4822 117 11503	220Ω	5%	0,1W
3304©	4822 051 10102	1kΩ	2%	0,25W
3305©	4822 051 20101	100Ω	5%	0,1W
3306©	4822 051 20471	470Ω	5%	0,1W
3307©	4822 051 20561	560Ω	5%	0,1W
3309©	4822 051 10102	1kΩ	2%	0,25W
3311©	4822 117 11449	2,2kΩ	1%	0,1W
3312©	4822 051 20399	39Ω	5%	0,1W
3313©	4822 051 10102	1kΩ	2%	0,25W
3314©	4822 051 20479	47Ω	5%	0,1W
3315©	4822 051 20479	47Ω	5%	0,1W
3316©	4822 117 11503	220Ω	5%	0,1W
3317	4822 116 52195	47Ω	5%	0,5W
3318©	4822 117 10833	10kΩ	1%	0,1W
3319©	4822 117 10353	150Ω	5%	0,1W
3320©	4822 117 10353	150Ω	5%	0,1W
3321©	4822 117 11507	6,8kΩ	1%	0,1W
3322©	4822 117 11507	6,8kΩ	1%	0,1W
3323©	4822 117 11449	2,2kΩ	1%	0,1W
3324©	4822 117 11449	2,2kΩ	1%	0,1W
3325©	4822 051 20822	8,2kΩ	5%	0,1W
3326©	4822 051 20822	8,2kΩ	5%	0,1W
3327©	4822 051 20822	8,2kΩ	5%	0,1W
3328©	4822 051 20822	8,2kΩ	5%	0,1W
3329©	4822 117 11148	56kΩ	1%	0,1W
3330©	4822 117 10837	100kΩ	1%	0,1W
3331©	4822 051 20332	3,3kΩ	5%	0,1W
3333©	4822 051 10102	1kΩ	2%	0,25W
3334©	4822 117 10834	47kΩ	1%	0,1W
3335	4822 050 11002	1kΩ	5%	0,2W
3336	4822 050 11002	1kΩ	5%	0,2W
3337©	4822 051 20105	1MΩ	5%	0,1W
3338©	4822 051 20105	1MΩ	5%	0,1W
3339©	4822 051 20332	3,3kΩ	5%	0,1W
3340©	4822 116 83933	15kΩ	1%	0,1W
3341©	4822 117 10833	10kΩ	1%	0,1W
3342©	4822 117 10833	10kΩ	1%	0,1W
3343©	4822 117 10834	47kΩ	1%	0,1W
3344©	4822 117 10834	47kΩ	1%	0,1W
3345©	4822 051 20101	100Ω	5%	0,1W
3346©	4822 051 20101	100Ω	5%	0,1W
3347©	4822 117 11449	2,2kΩ	1%	0,1W
3348	4822 116 52256	2,2kΩ	5%	0,16W
3349©	4822 051 20101	100Ω	5%	0,1W
3350©	4822 051 20101	100Ω	5%	0,1W
3351©	4822 117 11449	2,2kΩ	1%	0,1W
3352	4822 116 52256	2,2kΩ	5%	0,16W
3353	4822 050 11002	1kΩ	5%	0,2W
3354	4822 050 11002	1kΩ	5%	0,2W
3355©	4822 117 10833	10kΩ	1%	0,1W
3356©	4822 117 10833	10kΩ	1%	0,1W
3357	4822 050 11002	1kΩ	5%	0,2W
3358	4822 116 83881	390Ω	5%	0,5W
3359	4822 116 52175	100Ω	5%	0,5W
3361©	4822 117 10834	47kΩ	1%	0,1W

ELECTRICAL PARTSLIST *INTERFACE BOARD*

RESISTORS

3362©	4822 117 10834	47kΩ	1%	0,1W
3363	4822 116 52175	100Ω	5%	0,5W
3364	4822 116 83872	220Ω	5%	0,5W
3366©	4822 117 10833	10kΩ	1%	0,1W
3367©	4822 051 20101	100Ω	5%	0,1W
3369©	4822 117 10834	47kΩ	1%	0,1W
3370	4822 052 10229	22Ω	5%	0,33W
3371©	4822 051 20101	100Ω	5%	0,1W
3372©	4822 051 20101	100Ω	5%	0,1W
3373©	4822 117 10353	150Ω	5%	0,1W
3374©	4822 051 20101	100Ω	5%	0,1W
3375©	4822 117 10833	10kΩ	1%	0,1W
3376©	4822 117 10833	10kΩ	1%	0,1W
3377©	4822 117 11449	2,2kΩ	1%	0,1W
3378©	4822 117 11449	2,2kΩ	1%	0,1W
3379©	4822 117 10833	10kΩ	1%	0,1W
3380	4822 050 21003	10kΩ	2%	0,25W
3381	4822 050 21003	10kΩ	2%	0,25W
3383	4822 116 52283	4,7kΩ	5%	0,5W
3384	4822 116 52283	4,7kΩ	5%	0,5W
3385©	4822 117 10833	10kΩ	1%	0,1W
3386©	4822 117 10833	10kΩ	1%	0,1W
3387©	4822 051 10102	1kΩ	2%	0,25W
3388©	4822 051 10102	1kΩ	2%	0,25W
3391©	4822 051 20105	1MΩ	5%	0,1W
3392©	4822 051 20105	1MΩ	5%	0,1W
3393©	4822 051 20822	8,2kΩ	5%	0,1W
3394©	4822 051 20822	8,2kΩ	5%	0,1W
3395©	4822 051 20822	8,2kΩ	5%	0,1W
3396©	4822 051 20822	8,2kΩ	5%	0,1W
3397©	4822 051 20683	68kΩ	5%	0,1W
3398©	4822 117 10833	10kΩ	1%	0,1W
3400©	4822 051 20471	470Ω	5%	0,1W
3402©	4822 117 10837	100kΩ	1%	0,1W
3406©	4822 051 20683	68kΩ	5%	0,1W
3407©	4822 117 10837	100kΩ	1%	0,1W
3408©	4822 051 20471	470Ω	5%	0,1W
3409©	4822 117 10834	47kΩ	1%	0,1W
4303©	4822 051 20008	CHIP JUMPER 0805		
4304©	4822 051 20008	CHIP JUMPER 0805		
4305©	4822 051 20008	CHIP JUMPER 0805		
4307©	4822 051 20008	CHP JUMPER 0805		
4308©	4822 051 20008	CHIP JUMPER 0805		
4309©	4822 051 20008	CHIP JUMPER 0805		
4310©	4822 051 20008	CHIP JUMPER 0805		
4311©	4822 051 20008	CHIP JUMPER 0805		
4312©	4822 051 20008	CHIP JUMPER 0805		
4314©	4822 051 20008	CHIP JUMPER 0805		
4316©	4822 051 20008	CHIP JUMPER 0805		
4317©	4822 051 20008	CHIP JUMPER 0805		
4318©	4822 051 20008	CHIP JUMPER 0805		
4319©	4822 051 20008	CHIP JUMPER 0805		
4321©	4822 051 20008	CHIP JUMPER 0805		
4323©	4822 051 20008	CHIP JUMPER 0805		
4325©	4822 051 20008	CHIP JUMPER 0805		
4326©	4822 051 20008	CHIP JUMPER 0805		
4327©	4822 051 20008	CHIP JUMPER 0805		
4328©	4822 051 20008	CHIP JUMPER 0805		

COILS

5301	2422 536 00019	TRANSFORMER, DIGITAL OUT

DIODES

6325	4822 130 30621	1N4148
6326	4822 130 30621	1N4148
6370	4822 130 30621	1N4148
6371	4822 130 30621	1N4148
6372	4822 130 30621	1N4148
6373	3198 010 53380	BZX79-B3V3

TRANSISTORS

7325©	4822 130 42804	BC817-25
7326©	4822 130 42804	BC817-25
7327©	4822 130 42804	BC817-25
7328©	4822 130 42804	BC817-25
7329©	4822 130 60373	BC856B
7330©	4822 130 60373	BC856B
7331©	4822 130 60373	BC856B
7332©	4822 130 60373	BC856B
7340©	4822 130 60373	BC856B
7341©	4822 130 60511	BC847B
7370©	4822 130 60373	BC856B
7371	4822 130 40959	BC547B

INTEGRATED CIRCUITS

7301©	4822 209 17235	74LVU04D, 6-FOLD INVERTER
7302	4822 209 10263	HEF4052BP, SELECTOR IC
7303	5322 209 10576	HEF4053BP, SELECTOR IC
7320	4822 209 10263	HEF4052BP, SELECTOR IC
7321	4822 209 10263	HEF4052BP, SELECTOR IC
7322©	5322 209 14542	HEF4066BT, 4-FOLD SWITCH
7323©	4822 209 30095	LM833D, 2-FOLD OP-AMP.
7324©	4822 209 30095	LM833D, 2-FOLD OP-AMP.
7335©	4822 209 30095	LM833D, 2-FOLD OP-AMP.
7336©	4822 209 30095	LM833D, 2-FOLD OP-AMP.

MISCELLANEOUS

0035	4822 361 10753	CAROUSEL MOTOR
0070	4822 361 10753	TRAY MOTOR
1800	4822 265 10925	FFC-CONNECTOR, 15P
1805	4822 265 11533	FFC-CONNECTOR, 23P
1880	4822 276 13503	SWITCH
1881	4822 276 13503	SWITCH
1882	4822 276 13503	SWITCH
8001	3103 308 92020	FLEXFOIL CABLE, 23P, 420mm
8005	3103 308 91820	FLEXFOIL CABLE, 15P, 95mm

CAPACITORS

2800	4822 126 10053	180pF	10%	50V
2801	4822 122 10466	220pF	10%	50V
2802	4822 126 10053	180pF	10%	50V
2803	4822 122 10466	220pF	10%	50V
2804	4822 124 40769	4,7µF	20%	100V
2805	4822 122 10466	220pF	10%	50V
2806	4822 122 10466	220pF	10%	50V
2807	4822 126 12787	330pF	10%	50V
2808	4822 122 10466	220pF	10%	50V
2809	5322 124 41948	0,47µF	20%	50V
2810	4822 126 10053	180pF	10%	50V
2811	4822 122 10466	220pF	10%	50V
2812	4822 126 12785	47nF	20%	50V
2815	4822 126 13174	33nF	20%	16V
2816	4822 126 12878	1,5nF	10%	16V
2818	4822 126 12878	1,5nF	10%	16V
2822	4822 126 12878	1,5nF	10%	16V
2823	4822 122 33848	47pF	5%	50V
2824	4822 126 12785	47nF	20%	50V
2825	4822 121 51387	10nF	20%	16V
2826	4822 124 80231	47µF	20%	16V
2828	4822 124 40433	47µF	20%	25V
2829	4822 124 21732	10µF	20%	25V
2830	4822 121 51387	10nF	20%	16V
2831	4822 122 10577	3,3nF	10%	16V
2832	4822 122 10577	3,3nF	10%	16V
2833	4822 122 33069	33pF	5%	50V
2834	4822 122 33069	33pF	5%	50V
2835	4822 126 12785	47nF	20%	50V
2837	4822 124 40433	47µF	20%	25V
2838	4822 124 40248	10µF	20%	63V
2839	4822 124 40433	47µF	20%	25V
2840	4822 126 12882	100nF	20%	50V
2841	4822 126 12702	270pF	10%	50V
2842	4822 126 12339	2,2nF	10%	16V
2844	4822 126 12702	270pF	10%	50V
2849	4822 124 40769	4,7µF	20%	100V
2850	4822 122 33197	1nF	10%	50V
2851	4822 124 40433	47µF	20%	25V
2852	4822 126 12785	47nF	20%	50V
2853	4822 126 11585	22nF	20%	50V
2854	4822 126 12785	47nF	20%	50V
2855	4822 122 33519	470pF	10%	50V
2856	4822 122 33848	47pF	5%	50V
2857	4822 121 51387	10nF	20%	16V
2858	4822 124 81151	22µF	20%	50V
2859	4822 121 51387	10nF	20%	16V
2860	4822 124 41596	22µF	20%	50V
2861	4822 124 41596	22µF	20%	50V
2862	4822 124 11912	220µF	20%	6,3V

CAPACITORS

2863	4822 124 11912	220µF	20%	6,3V
2865	4822 126 12882	100nF	20%	50V
2869	4822 126 12785	47nF	20%	50V
2872	4822 126 12785	47nF	20%	50V
2873	4822 124 12233	47µF	20%	25V
2875	4822 126 11585	22nF	20%	50V
2876	4822 126 12785	47nF	20%	50V
2877	4822 122 33848	47pF	5%	50V
2878	4822 122 10466	220pF	10%	50V
2879	4822 126 12785	47nF	20%	50V
2880	4822 126 12882	100nF	20%	50V
2881	4822 124 40769	4,7µF	20%	100V
2882	4822 124 81151	22µF	20%	50V
2884	4822 124 40769	4,7µF	20%	100V
2885	4822 124 40769	4,7µF	20%	100V
2887	4822 126 12882	100nF	20%	50V
2888	4822 124 40769	4,7µF	20%	100V
2891	4822 122 10576	1,8nF	10%	16V
2892	4822 126 11714	4,7nF	20%	16V
2893	4822 122 10466	220pF	10%	50V

RESISTORS

3700	4822 116 83883	470Ω	5%	0,16W
3705	4822 116 83872	220Ω	5%	0,5W
3706	4822 116 83883	470Ω	5%	0,16W
3707	4822 116 83883	470Ω	5%	0,16W
3708	4822 116 83883	470Ω	5%	0,16W
3709	4822 116 52257	22kΩ	5%	0,5W
3711	4822 050 21003	10kΩ	2%	0,25W
3713	4822 116 52257	22kΩ	5%	0,5W
3714	4822 050 21003	10kΩ	2%	0,25W
3715	4822 116 52234	100kΩ	5%	0,5W
3716	4822 116 52175	100Ω	5%	0,5W
3718	4822 116 52283	4,7kΩ	5%	0,5W
3728	4822 116 52283	4,7kΩ	5%	0,5W
3730	4822 050 23303	33kΩ	1%	0,6W
3731	4822 050 21003	10kΩ	2%	0,25W
3760	4822 050 11002	1kΩ	5%	0,2W
3761	4822 050 11002	1kΩ	5%	0,2W
3762	4822 050 11002	1kΩ	5%	0,2W
3763	4822 116 52231	820Ω	5%	0,5W
3764	4822 052 10338	3,3Ω		NFR25
3766	4822 050 21003	10kΩ	2%	0,25W
3768	4822 116 52283	4,7kΩ	5%	0,5W
3769	4822 050 21003	10kΩ	2%	0,25W
3800	4822 116 52291	56kΩ	5%	0,5W
3801	4822 050 21003	10kΩ	2%	0,25W
3802	4822 116 52291	56kΩ	5%	0,5W
3803	4822 050 21003	10kΩ	2%	0,25W
3805	4822 050 21003	10kΩ	2%	0,25W
3806	4822 050 21003	10kΩ	2%	0,25W
3807	4822 050 21003	10kΩ	2%	0,25W
3808	4822 050 21003	10kΩ	2%	0,25W
3809	4822 116 83883	470Ω	5%	0,16W
3811	4822 116 52251	18kΩ	5%	0,5W
3812	4822 053 10228	2,2Ω	5%	1W
3814	4822 116 52191	33Ω	5%	0,5W
3815	4822 052 10478	4,7Ω	5%	NFR
3816	4822 116 83884	47kΩ	5%	0,16W
3817	4822 116 52298	680kΩ	5%	0,5W
3819	4822 116 83883	470Ω	5%	0,16W
3820	4822 116 52289	5,6kΩ	5%	0,16W

RESISTORS

3821	4822 116 52289	5,6kΩ	5%	0,16W
3822	4822 116 52263	2,7kΩ	5%	0,5W
3823	4822 050 11002	1kΩ	5%	0,2W
3824	4822 050 11002	1kΩ	5%	0,2W
3825	4822 050 11002	1kΩ	5%	0,2W
3826	4822 116 52257	22kΩ	5%	0,5W
3827	4822 050 23303	33kΩ	1%	0,6W
3828	4822 116 52257	22kΩ	5%	0,5W
3831	4822 116 52257	22kΩ	5%	0,5W
3832	4822 050 21003	10kΩ	2%	0,25W
3833	4822 116 52257	22kΩ	5%	0,5W
3834	4822 116 52257	22kΩ	5%	0,5W
3835	4822 052 10338	3,3Ω		NFR25
3837	4822 050 11002	1kΩ	5%	0,2W
3838	4822 050 11002	1kΩ	5%	0,2W
3839	4822 116 52234	100kΩ	5%	0,5W
3840	4822 116 52234	100kΩ	5%	0,5W
3841	4822 116 52283	4,7kΩ	5%	0,5W
3842	4822 116 83884	47kΩ	5%	0,16W
3843	4822 050 23303	33kΩ	1%	0,6W
3844	4822 116 52283	4,7kΩ	5%	0,5W
3845	4822 116 83884	47kΩ	5%	0,16W
3846	4822 050 23303	33kΩ	1%	0,6W
3847	4822 116 83961	6,8kΩ	5%	0,16W
3848	4822 116 52234	100kΩ	5%	0,5W
3849	4822 116 52234	100kΩ	5%	0,5W
3850	4822 116 52276	3,9kΩ	5%	0,5W
3851	4822 052 10338	3,3Ω		NFR25
3852	4822 052 10228	2,2Ω	5%	0,33W
3853	4822 116 83883	470Ω	5%	0,16W
3854	4822 116 52175	100Ω	5%	0,5W
3855	4822 116 52175	100Ω	5%	0,5W
3857	4822 116 52191	33Ω	5%	0,5W
3858	4822 116 52257	22kΩ	5%	0,5W
3859	4822 116 52257	22kΩ	5%	0,5W
3862	4822 116 52175	100Ω	5%	0,5W
3863	4822 116 52191	33Ω	5%	0,5W
3864	4822 116 52176	10Ω	5%	0,5W
3865	4822 116 52176	10Ω	5%	0,5W
3866	4822 050 21003	10kΩ	2%	0,25W
3867	4822 116 52206	120Ω	5%	0,5W
3869	4822 050 24708	4,7Ω	1%	0,6W
3870	4822 116 52175	100Ω	5%	0,5W
3871	4822 050 21003	10kΩ	2%	0,25W
3872	4822 050 21003	10kΩ	2%	0,25W
3873	4822 116 83883	470Ω	5%	0,16W
3874	4822 050 21003	10kΩ	2%	0,25W
3875	4822 050 21003	10kΩ	2%	0,25W
3876	4822 116 52234	100kΩ	5%	0,5W
3877	4822 050 21003	10kΩ	2%	0,25W
3878	4822 050 21003	10kΩ	2%	0,25W
3879	4822 050 21003	10kΩ	2%	0,25W
3880	4822 116 52219	330Ω	5%	0,5W
3881	4822 050 21003	10kΩ	2%	0,25W
3882	4822 116 83884	47kΩ	5%	0,16W
3883	4822 116 52234	100kΩ	5%	0,5W
3884	4822 116 52276	3,9kΩ	5%	0,5W
3885	4822 116 52234	100kΩ	5%	0,5W
3886	4822 116 83884	47kΩ	5%	0,16W
3887	4822 116 83883	470Ω	5%	0,16W

RESISTORS

3888	4822 050 21003	10kΩ	2%	0,25W
3889	4822 116 83883	470Ω	5%	0,16W
3890	4822 050 11002	1kΩ	5%	0,2W
3891	4822 050 11002	1kΩ	5%	0,2W
3892	4822 116 83883	470Ω	5%	0,16W
3893	4822 116 83883	470Ω	5%	0,16W
3894	4822 116 52191	33Ω	5%	0,5W
3895	4822 116 52176	10Ω	5%	0,5W
3897	4822 116 52175	100Ω	5%	0,5W
3899	4822 116 52175	100Ω	5%	0,5W

COILS

1810	4822 242 10849	CRYSTAL 8,46MHz

DIODES

6871	4822 130 30621	1N4148
6872	4822 130 30621	1N4148
6873	4822 130 30621	1N4148
6874	4822 130 30621	1N4148
6875	3198 010 55180	DIO REG BZX79-B5V1
6877	3198 010 53980	DIO REG BZX79-B3V9

TRANSISTORS

7812	4822 130 40959	BC547B
7874	4822 130 40959	BC547B
7875	4822 130 40959	BC547B

INTEGRATED CIRCUITS

7801 ©	4822 209 17286	TZA1024T/N1, HF-AMPLIFIER
7806	9352 628 49112	IC TDA7073A/N4, SERVO DRIVER
7807	9352 628 49112	IC TDA7073A/N4, MOTOR DRIVER
7810 ©	8203 303 11278	PCM1716, D/A CONVERTER
7871	9352 628 49112	IC TDA7073A/N4, MOTOR DRIVER
7873	5322 209 10421	HEF4094BP, SHIFT REGISTER
7876 ©	4822 209 16143	LC89170M, CD TEXT IC
7877 ©	9352 641 80557	SAA7324H/M2B, CD10 SIGNAL PROC.
7878	4822 209 72042	MC78L05ACP, STABILIZER

Philips Consumer Service GmbH
Colonia-Allee 11, 51067 Köln
Tel.: 0221/96960-0, Fax: 0221/96960-809

PHILIPS

Art. Code: 57
Sachgebiet: CD RECORDABLE
Memo: DE10JUN

SI

Wichtig für die Werkstatt!
Nummer: 57140
Datum: 27.04.01

V11658 ✓
V27168
V24594 # 1029026
V24794 # 1026054
V26145
V25007
5396
5400

Service Information

Betrifft: Gerätetypen s.u.
Software Update & ComPair V.1.6

Verteiler: S d F 1

CDR570, CDR770, CDR775, CDR776, CDR777, CDR785, CDR930, CDR950, FW-R7, FW-R8

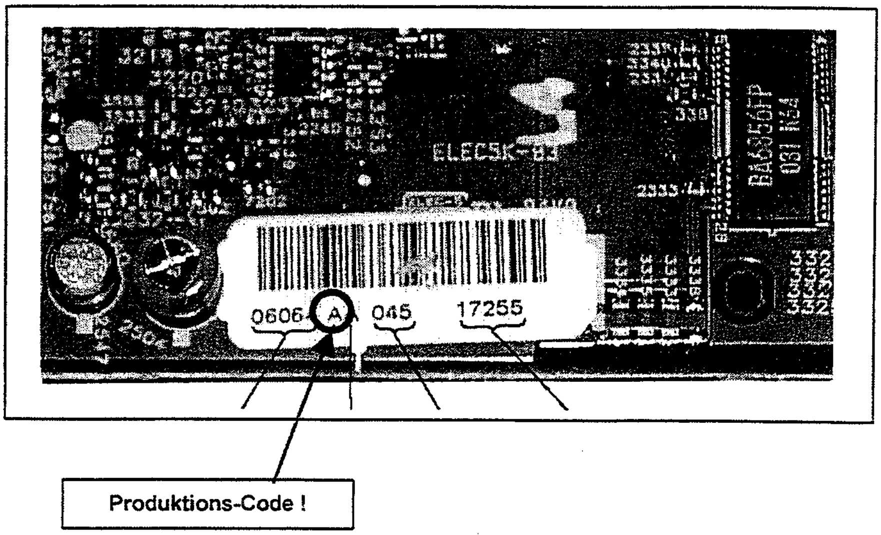
Zusammenfassung aller Software und Hardware Änderungen

Nachfolgende Tabellen sollen eine komplette Übersicht liefern, über die Software- und Hardware Änderungen bei den oben genannten Geräten.

Die folgenden Service Informationen behalten ihre Gültigkeit bzw. werden hiermit ergänzt.

SI 57040 (3112 785 57040)
SI 57050 (3112 785 57050)
SI 57110 (3112 785 57110)
SI 57130 (3112 785 57130)

Zur leichteren Identifizierung der jeweiligen Fertigungsstände befindet sich auf dem CDR Mainboard ein Aufkleber. Für die Reparatur ist nur der Produktions-Code von Bedeutung.



Der Softwarestand der Geräte kann mit ComPair ausgelesen werden.
Das "Y" in der Tabelle steht für eine noch notwendige Änderung auf dem CDR-Mainboard, ist dagegen das Feld leer so ist diese Änderung bereits Werkseitig erfolgt.

z.B. CDR950 mit Produktions-Code "H"
Bei diesen Gerät muß ein Software Update mit anschließenden Abgleich erfolgen.

Gerätetyp	CDR570, CDR930										
Software Version	1.04 & 91.48	1.23 & 91.63			1.34 & 91.80	1.43 & 91.91	1.47 & 91.96	1.51 & 92.01	1.54 & 92.08			1.56 & 92.11
mainboards mit print layout A2 oder A3 müßen gegen ein neues mainboard 3104 128 05840 ausgetauscht werden	Y											
Produktions-Code (Aufkleber auf dem CDR mainboard)		**<F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**S**
Software Update auf DASP 1.56 & MACE 92.11 und Abgleich ComPair Version 1.6		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
C2335 von 10nF auf 47nF (3198 017 34730) & R3337 von 68kOhm auf 56kOhm (4822 051 30563) ändern		Y										
Hinzufügen von R3535 27Ohm (4822 116 52188)		Y	Y	Y	Y	Y	Y	Y				
Ändern von C2725, C2726, C2727 auf 100nF/50V (4822 126 14585)		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Austausch von R3411 und R3439 durch Spule EMI 100MHZ (4822 157 11717)		Y	Y	Y	Y	Y	Y	Y	Y			
C2322 ändern von 3,3nF auf 1,5nF (4822 126 14247)		Y	Y	Y	Y	Y	Y	Y				

Gerätetyp	CDR770											
Software Version	1.04 & 91.48	1.23 & 91.63			1.34 & 91.80	1.43 & 91.91	1.47 & 91.96	1.51 & 92.01	1.54 & 92.08			1.56 & 92.11
mainboards mit print layout A2 oder A3 müßen gegen ein neues mainboard 3104 128 05850 ausgetauscht werden	Y											
Produktions-Code (Aufkleber auf dem CDR mainboard)		<F	G	H	I	J	K	L	M	N	O	S
Software Update auf DASP 1.56 & MACE 92.11 und Abgleich ComPair Version 1.6		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
C2335 von 10nF auf 47nF (3198 017 34730) & R3337 von 68kOhm auf 56kOhm (4822 051 30563) ändern		Y										
Hinzufügen von R3535 27Ohm (4822 116 52188)		Y	Y	Y	Y	Y	Y	Y				
Ändern von C2725, C2726, C2727 auf 100nF/50V (4822 126 14585)		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Austausch von R3411 und R3439 durch Spule EMI 100MHZ (4822 157 11717)		Y	Y	Y	Y	Y	Y	Y	Y			
C2322 ändern von 3,3nF auf 1,5nF (4822 126 14247)		Y	Y	Y	Y	Y	Y	Y				

Gerätetyp	CDR775, CDR776, CDR777												
Software Version	1.04 & 91.48	1.23 & 91.63			1.34 & 91.80	1.43 & 91.91	1.47 & 91.96	1.51 & 92.01	1.54 & 92.08				1.56 & 92.11
mainboards mit print layout A2 oder A3 müßen gegen ein neues mainboard 3104 128 05860 ausgetauscht werden	Y												
Produktions-Code (Aufkleber auf dem CDR mainboard)		<F	G	H	I	J	K	L	M	N	O	P	T
Software Update auf DASP 1.56 & MACE 92.11 und Abgleich ComPair Version 1.6		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
C2335 von 10nF auf 47nF (3198 017 34730) & R3337 von 68kOhm auf 56kOhm (4822 051 30563) ändern		Y											
Hinzufügen von R3535 27Ohm (4822 116 52188)		Y	Y	Y	Y	Y	Y	Y	Y				
Ändern von C2725, C2726, C2727 auf 100nF/50V (4822 126 14585)		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Austausch von R3411 und R3439 durch Spule EMI 100MHZ (4822 157 11717)		Y	Y	Y	Y	Y	Y	Y	Y	Y			
C2322 ändern von 3,3nF auf 1,5nF (4822 126 14247)		Y	Y	Y	Y	Y	Y	Y	Y				

Gerätetyp	CDR950, CDR951								
Software Version	1.23 & 91.63	1.34 & 91.80	1.43 & 91.91	1.47 & 91.96	1.51 & 92.01		1.54 & 92.09		1.56 & 92.11
Produktions-Code (Aufkleber auf dem CDR mainboard)	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**K**
Software Update auf DASP 1.56 & MACE 92.11 und Abgleich ComPair Version 1.6	Y	Y	Y	Y	Y	Y	Y	Y	
C2335 von 10nF auf 47nF (3198 017 34730) & R3337 von 68kOhm auf 56kOhm (4822 051 30563) ändern	Y								
Hinzufügen von R3535 27Ohm (4822 116 52188)	Y	Y	Y	Y	Y				
Ändern von C2725, C2726, C2727 auf 100nF/50V (4822 126 14585)	Y	Y	Y	Y	Y	Y	Y		
Austausch von R3411 und R3439 durch Spule EMI 100MHZ (4822 157 11717)	Y	Y	Y	Y	Y				
C2322 ändern von 3,3nF auf 1,5nF (4822 126 14247)	Y	Y	Y	Y	Y				

Gerätetyp	CDR MINI CDR785, CDR786, FW-R7, FW-R8										
Software Version	0.23 & 91.80		0.24 & 91.91	0.25 & 91.96	0.26 & 92.01			0.29& 92.08		0.30 & 92.11	0.31 & 92.11
Produktions-Code (Aufkleber auf dem CDR mainboard)	**<C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**
Software Update auf DASP 0.31 & MACE 92.11 und Abgleich ComPair Version 1.6	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
C2335 von 10nF auf 47nF (3198 017 34730) & R3337 von 68kOhm auf 56kOhm (4822 051 30563) ändern	Y										
Hinzufügen von R3535 27Ohm (4822 116 52188)	Y	Y	Y	Y	Y						
Ändern von C2725, C2726, C2727 auf 100nF/50V (4822 126 14585)	Y	Y	Y	Y	Y	Y	Y	Y			
Austausch von R3411 und R3439 durch Spule EMI 100MHZ (4822 157 11717)	Y	Y	Y	Y	Y	Y					
Hinzufügen von 2721 (6K8)	Y	Y	Y	Y	Y	Y	Y	Y			
C2322 ändern von 3,3nF auf 1,5nF (4822 126 14247)	Y	Y	Y	Y	Y						